

**ADEQUACY OF NUCLEAR POWERPLANT SECURITY**

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Y 4. P 96/10: S. HRG. 103-57

Adequacy of Nuclear Powerplant Secu...

**HEARING**  
BEFORE THE  
SUBCOMMITTEE ON  
CLEAN AIR AND NUCLEAR REGULATION  
OF THE  
COMMITTEE ON  
ENVIRONMENT AND PUBLIC WORKS  
UNITED STATES SENATE  
ONE HUNDRED THIRD CONGRESS  
FIRST SESSION  
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MARCH 19, 1993  
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Printed for the use of the Committee on Environment and Public Works



U.S. GOVERNMENT PRINTING OFFICE

66-197 ⇌

WASHINGTON : 1993

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For sale by the U.S. Government Printing Office  
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402  
ISBN 0-16-040883-0



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# ADEQUACY OF NUCLEAR POWERPLANT SECURITY

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FRIDAY, MARCH 19, 1993

U.S. SENATE,  
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,  
SUBCOMMITTEE ON CLEAN AIR AND NUCLEAR REGULATION,  
*Washington, DC.*

The subcommittee met, pursuant to notice, at 9:09 a.m. in room 406, Dirksen Senate Office Building, Hon. Joseph I. Lieberman [chairman of the subcommittee] presiding.

Present: Senators Lieberman, Baucus, Kempthorne, and Simpson.

## OPENING STATEMENT OF HON. JOSEPH I. LIEBERMAN, U.S. SENATOR FROM THE STATE OF CONNECTICUT

Senator LIEBERMAN. The hearing will come to order.

Good morning, and welcome to this hearing of the subcommittee on Clean Air and Nuclear Regulation. This morning, with the normal uncertainties of Senate scheduling, I want to indicate that there's a vote set to go off in about five minutes, and we have about 20 minutes, Senator Baucus and I, to get over there and come back. So I think we'd like to start and give our opening statements, at least, and then see where we are. We may have to recess for a few moments.

Today this subcommittee is going to look at the adequacy of the Nuclear Regulatory Commission's rules and regulations to protect nuclear powerplants from terrorism and sabotage. On February 7th of this year, an intruder drove through the gate at the Three Mile Island nuclear powerplant and proceeded into the protected area of the plant. He crashed his station wagon into the door of the turbine building and then ran inside the building, where it took four hours to find him. During that period, it was not known whether he was alone, whether he was armed, and what his intentions were. Fortunately, the intruder did no significant damage to the plant.

Shortly after the incident, when I read about it, I wrote to the Nuclear Regulatory Commission asking for its own report on that incident. I asked the NRC to explain whether it would have been better, for instance, to shut the plant down rather than keep it running at full power while the intruder was inside the turbine building. I also noted the statement of one of the officials at the NRC that we need "not to worry much about terrorists," and I asked about the NRC's intentions with regard to security require-

ments at nuclear powerplants. I hope that the NRC can help us with the beginnings of answers to some of those questions today.

After about three weeks passed from the time of the incident at Three Mile Island, and a week after the letter that I wrote to the NRC, as we all well know, a bomb was intentionally placed in the parking garage underneath the World Trade Center in New York City. The explosion that followed killed six people, injured hundreds more, and that horrible incident I think fundamentally changed Americans' perceptions about our vulnerability to terrorist attack. It was, after all, the most significant terrorist attack within this country in almost 17 years, since the bomb was placed at La Guardia Airport in 1975.

Taken together, these two events raise this question: Are nuclear powerplants adequately protected against violent attack, either by sabotage or by terrorism? More specifically, in this case, are nuclear powerplants protected against people using vehicles to drive explosives right up to the plant? To date, the FBI and the NRC have concluded that this type of attack on a nuclear powerplant is unlikely. They believe that current nuclear powerplant security requirements are adequate, and, in fact, there has never been an attack by a bomb-laden vehicle on an American nuclear powerplant.

As a result, current NRC regulations do not require nuclear powerplant security systems to protect against truck bombs. In technical terms, the use of vehicles as bombs or the use of vehicles to carry explosives are not considered part of the design basis threat—that's the term of art here—the design basis threat that nuclear powerplants must be able to protect against. However, this does not mean, of course, that such an event can never occur. That an attack has not yet happened obviously does not mean that it will never happen, and we hold this hearing this morning to do whatever we can, working with officials of the NRC and the FBI, to make sure that we in our Government are doing all we can to guarantee that such an attack will never occur.

In doing so, this subcommittee is following the age-old wisdom that it is better to be safe than to be sorry. We know, for instance, that as good as counterintelligence is—and counterintelligence is an important part of our Counter Terrorism program in this country—it's not perfect. We cannot know about every terrorist act in advance, particularly when carried out by groups that seem independent, perhaps even amateurish. We cannot prevent every terrorist act from occurring. Thus, fail-safe protective measures against terrorism, in my opinion, cannot be based on counterintelligence alone.

So the plant security requirements are very, very important. I think they must be periodically reexamined to ensure that they're up to date and they're protecting against realistic threats. In fact, on March 1st of this year, the Nuclear Regulatory Commission announced that it is reviewing the so-called design basis threat for nuclear powerplants, and that is reassuring news.

This subcommittee has oversight of the NRC and its regulatory programs. Therefore, we feel an obligation to ensure that the NRC is properly considering the evidence presented by the intelligence community and by the nuclear power industry in developing their



security requirements. Today we're going to consider the views of intelligence experts on the nature of the terrorist threat. We will also consider whether the NRC should require that nuclear power-plant security systems be upgraded to prevent incidents like the one at Three Mile Island or even more serious car or truck bombings, and whether the NRC should, as some are petitioning it to do now, lower some of their internal security requirements that are currently in place.

We obviously are very lucky that the intruder at Three Mile Island did not cause more damage. He carried no weapons and no bomb. But, obviously, he could have. The break-in at Three Mile Island was a warning bell, and what happened a month later in New York was really a warning earthquake. So we're asking today, isn't it time to respond to those warnings by taking additional steps to prevent intrusions onto the property of nuclear powerplants? The fact is that you can't drive a car near the garage in this building without going around a big number of cement blocks, through two gates, and past several security guards. If we do all that just to protect United States Senators, shouldn't we do even more to protect a nuclear powerplant?

Now, because this is an open hearing, we don't want to discuss any classified information. In any democratic system of government, obviously, there's always a tension between maintaining secrecy about security requirements and maintaining public review of governmental actions. However, there has been a good public debate on many of these issues over more than a decade without any compromise of plant security, and this hearing is intended to further that healthy debate.

I would now yield to the Chairman of the full committee, the Senator from Montana, Senator Max Baucus.

Senator BAUCUS. Thank you very much, Senator. I'm very pleased that you are holding this hearing this morning. I think it's obvious that the more this committee can get ahead of problems rather than behind them, the better off the country will be and the better off all of us in this committee will be.

The warning signals are clear. Obviously, the incident at Three Mile Island where someone drove into the plant and was able to hide out for several hours indicates that we've got a problem. Combined with Three Mile Island, someone apparently drove into the parking garage at the World Trade Center, and we know the devastation that caused. We're also reminded of the Marine barracks tragedy in Lebanon. Although it occurred in another country, it was another incident where someone drove an explosive laden vehicle into an American facility, and caused severe damage.

It creates questions of confidence as well. People who work in or live around a nuclear facility want to have peace of mind. They want to know that they can live and work and conduct their lives the same as most everybody in this country. They don't want to live with the possibility of a devastating incident occurring right where they live or work.

I know that NRC means well, and I think this is an opportunity for us to dig down a little deeper and to do the very best possible job we can of making sure that we minimize the potential of a devastating occurrence.

I commend you, Mr. Chairman, for holding this hearing, and I look forward to the testimony of the witnesses.

Thank you.

Senator LIEBERMAN. Thank you, Senator Baucus. Thank you for your support. We appreciate that you, as the Chairman of the full committee, are taking the time to be with us this morning.

The bell has just sounded for the vote, and with your indulgence, I'd like to recess the hearing so we can go and vote and then come back and continue the hearing. We've been guaranteed—insofar as guarantees are worth anything here—that there won't be another vote until 11:30.

The hearing will recess.

[Recess.]

Senator LIEBERMAN. We will resume the hearing, and I thank you for your patience.

Our first panel is from the FBI. We have Harry Brandon, who is accompanied by William McGrath.

We welcome you.

**STATEMENT OF HARRY B. BRANDON, III, DEPUTY ASSISTANT DIRECTOR, INTELLIGENCE DIVISION, FEDERAL BUREAU OF INVESTIGATION, ACCOMPANIED BY WILLIAM MCGRATH, UNIT CHIEF, COUNTER TERRORISM PLANNING UNIT**

Mr. BRANDON. Thank you, Mr. Chairman. In the interest of time, I will try and summarize my statement.

Senator LIEBERMAN. Without objection, all statements will be printed in full in the record. We appreciate your willingness to abbreviate.

Mr. BRANDON. As you've noted, on February 26, 1993, the whole country stood riveted as events showed that an explosive device had caused extensive damage to the World Trade Center. Eventually, we would all become aware that this criminal act had resulted in a tragic loss of life, as well as injuries to hundreds and hundreds of innocent persons, and extensive property damage.

There has certainly been a lot of speculation that this bombing was the work of terrorists. We are conducting an investigation. We consider it as a suspected act of terrorism. I do need to stress that this investigation is still ongoing, and many questions remain to be resolved, and legal proceedings have not really begun. Accordingly, I'm really unable to discuss this particular case in any detail.

I would like to observe, however, that whatever the motivation, we do not have a reason to believe that this incident is the forerunner of a wave of terrorism inside the United States. I think you're aware that since the Persian Gulf crisis, the terrorist threat level in the United States has actually been considered to be low. Perhaps even more significant, as these charts will show, between 1982 and 1992 terrorist incidents within the United States, with few exceptions, have shown a steady decline.

I don't minimize the recent activity at Three Mile Island or the World Trade Center. It certainly does remind us we can't be complacent. We have to continue to develop plans and initiatives to guard against this sort of either criminal act or act of terrorism.

Historically, turmoil in the world political and economic arenas—and we're certainly seeing that now—have had an impact on the terrorist threat both in the United States and abroad. While the United States has not recently experienced the same level of terrorist activity domestically as other nations, terrorism does clearly continue to pose a threat to U.S. persons and property abroad. In fact, of the 361 incidents of terrorism occurring outside of the United States in 1992, Americans or U.S. interests abroad were the victims or targets in 39 percent of the incidents. So Americans and U.S. interests abroad do remain somewhat at risk.

The FBI is the lead Federal agency in response to terrorism domestically and the lead Federal law enforcement agency responding to acts of terrorism abroad. As such, we have many ongoing programs. One of our most important programs is to mitigate the threat of nuclear terrorism within the United States. We, in coordination with the Department of Energy, the Department of Defense, and specifically the Nuclear Regulatory Commission, have developed specific crisis management procedures and plans that enable us to respond to threats against nuclear facilities in the United States. This effort is coordinated and incorporates timely dissemination of pertinent threat information, continual development of response capabilities through training and research, and the application of FBI, other U.S. Government, and local resources necessary to assist in countering and interdicting any threat of nuclear terrorism.

We have developed in all of our 56 field offices, I believe, positive and productive relationships with all agencies associated with nuclear facilities. We've capitalized on these professional relationships through the development of interagency crisis management exercises and training seminars in conjunction with the Department of Defense, the Department of Energy, and the NRC.

As I previously stated, we do not key on the event in New York as the beginning of a wave of terrorism in the United States. There's obviously a certain inherent risk in making such a statement, as you could be proven wrong rather quickly. But our constant, continuous analysis of all indicators worldwide does not show the beginning of such an initiative or wave of terrorism.

With regard to nuclear facilities in the United States specifically, we rate the threat of acts of terrorism as low. We have no current indications of targeting or planning of acts of terrorism by any groups or individuals.

To close, I'd like to note that few, if any, of the women and men of the FBI forget the fact that our FBI office in Puerto Rico had a LAW rocket fired into the office in an act of terrorism. None of us forget the indelibly printed, searing memory of a little baby's shoe among the luggage strewn across Scotland following the bombing of Pan Am 103. None of us will forget the carnage that we've all recently seen displayed in New York. I do want to assure you that women and men of the FBI remain committed to a policy of vigilance and of coordination with all agencies, a policy which I believe means that the United States will remain a very hostile environment for terrorist activities now and hopefully in the future.

At this point, I think I will stop and would be pleased to be responsive to any questions.

Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you, Mr. Brandon. That was a very helpful opening statement.

Let me begin by saying this. In the four years that I've been here, I've had some experience in this subject matter because I took it to be one that I was interested in and wanted to become informed on, and my conclusion over the time that I've been involved both in conducting hearings in other committees and meeting with people in the Government who are involved is that the FBI has done a great job in Counter Terrorism, that one of the reasons why we've not been victimized more is the sense that terrorists have that this is a tough place to do their business.

Ultimately, the business of a terrorist is a cowardly business. They're much more inclined to strike, as you well know, at undefended or softer targets. Yet, as we saw in the Marine barracks in Beirut and as we saw again at the World Trade Center, they still do strike. And when they strike effectively, it's a tragic loss of life that results.

Let me ask you about the strategy of the FBI in the Counter Terrorism effort. Am I correct in stating that the work that you do in counterintelligence is essentially trying to infiltrate groups that might carry out terrorist attacks is at the heart of the strategy?

Mr. BRANDON. That's a very major part of our strategy within the United States. Of course, as you're aware, we do have procedures and guidelines that have to be followed, but within the parameters of those guidelines—and I think that they are reasonable guidelines—that is a major part of our strategy. But I'll note that it's also coupled with recognizing the fact that terrorism now is not localized. Terrorism is a phenomena that we see around the world.

An equal part of our strategy has been, particularly in the last five or six years, the development of working relationships with intelligence and law enforcement agencies around the world. That's a real keystone of our strategy today, to ensure that we have working relationships, and the movement of intelligence between countries is vital.

Senator LIEBERMAN. Because a terrorist attack that is carried out or planned for the United States in fact may either originate outside of the United States, or at least be with the cooperation of a group that's located outside the United States, so that the counterintelligence effort has to be worldwide.

Mr. BRANDON. Absolutely.

Senator LIEBERMAN. There was an article within the last week in the Wall Street Journal in which they quoted a number of authorities on terrorism, and the suggestion or the question raised there in the aftermath of the World Trade Center bombing was whether we're now seeing more independent, localized, in some senses amateurish terrorist plots or opportunities going on, citing what seem to be some of the mistakes that were made by the group that is now suspected with carrying out the World Trade Center bombing. Do you think that is a development here?

Mr. BRANDON. I don't know. I am familiar with the article that you mentioned, and it's thought provoking. It's not dissimilar to some of the process that we've been going through in the past few weeks—in particular, a great deal of intensity in terms of evaluat-

ing what we see ahead. We don't yet know the motive, and we don't yet know the whys and wherefores of the Trade Center. So there's speculation built into the article. It is certainly possible that some of the factors cited in the article may well be accurate.

I don't discount what's in the article, and to amplify, if I might, just a moment, it cited specifically groups of extremists without what we've seen in the past, which would be organizational or sponsored groups that will undertake acts on their own. If in fact this does begin to occur, I will say very honestly the job of all of us becomes much more difficult.

Senator LIEBERMAN. Yes, absolutely. That was my question, that insofar as we have been spared here in the United States from the kind of terrorist acts that have occurred in much greater frequency elsewhere because of the skill of the counterintelligence effort carried out by the FBI, it obviously becomes harder to carry out that effort if we're dealing with groups that are more local, more independent, more amateurish, less connected to known extremist groups. Is that correct?

Mr. BRANDON. That may well be correct, although I will say, hopefully with some justifiable pride, that we have a very difficult operating environment in the United States—

Senator LIEBERMAN. Talk about that a little bit, if you would.

Mr. BRANDON.—not only because of the FBI, but because of certainly other Federal and State and local law enforcement capabilities and a very conscious effort to merge and train across all lines of law enforcement in this area to ensure that there's information sharing up and down, there's training, there's investigative training that goes on.

Our operating environment is fairly hostile. I think it presumes that somebody is willing to not only undertake an act of terrorism, but run the very real risk of being incarcerated for an extended period of time following that. If you're willing to do that, then it becomes more difficult. But, in fact, we do have, I think, a very hostile operating environment in the United States. I think this is recognized. It should be.

Senator LIEBERMAN. Well, that's an important point, just going back to what I said earlier about terrorism being a coward's business, that not only is the counterintelligence effort here in this country important, but also the probability as close to a certainty that we want to send the message that once the act is committed, there's extraordinary law enforcement work that will be done to apprehend the perpetrators, and then hopefully to severely punish them. That has to be part of the overall message, even if counterintelligence doesn't prevent the initial act.

Mr. BRANDON. It is. I think that's a critical part of the message, and I think it's particularly important for everybody to understand that we don't stop. We don't give up. We go worldwide. We've seen instances of that. We had an instance—I think it was March 3rd of this month in New York—where a terrorist was convicted of planting three explosive devices 20 years before. We just don't give up. We won't stop, nor will the local law enforcement authorities. I hope people understand that, because it's real.

Senator LIEBERMAN. Good. So do I. Let me come back to a different part of this story. I looked over the 1991 FBI report on terror-

ism in the U.S., and it's indicated clearly there that the most common type of terrorist attack during the four-year period from 1987 to 1991 was attack by bombing. Is that still the most common type of terrorist attack?

Mr. BRANDON. Yes, it is.

Senator LIEBERMAN. The 1991 report describes the attacks of one individual, who I'm sure is familiar to you, who called his organization Up the IRS, Inc., a funny name but not so funny in terms of what he did. Over a four-year period, this individual bombed a number of IRS facilities in southern California, and that report states, and I quote:

This case illustrated the effect that one terrorist can have over a geographic area. The attacks range from a mortar barrage to extremely potent vehicle bombs. The truck bomb of 1990 contained approximately 2,000 pounds of an explosive component and could have, if it had exploded, leveled two city blocks. This investigation illustrates how one individual having the motive, technological background, and opportunity can wage an extensive campaign of terror. Over a four-year period, Mr. Hicks who was the individual involved here planned his own attacks, conducted his own reconnaissance missions, and built each device in his home garage.

So it leads me back to one of the earlier questions, which is, to what extent does this case indicate that bombing attacks on unpopular targets still remain realistic possibilities in the United States?

Mr. BRANDON. You ask a difficult question, and you ask the right question, the same one that we go through continually.

Senator LIEBERMAN. I'm sure.

Mr. BRANDON. Bill, in his Counter Terrorism Planning Unit, does that on a daily basis. There is no question that the lone individual in some ways can be more difficult. There's no easy answer to your question. I think you know that in asking that.

Senator LIEBERMAN. Right.

Mr. BRANDON. I do think, though, that one of the answers and one that we've worked on and we continue to work on is the matter of public and professional awareness. I would hope, for example, that today we might stand a better chance of having somebody notify us that an individual had come into his or her place of business and purchased components which could be used to make a device, or that somebody had purchased legally but purchased a large amount of dynamite. There's not a legal requirement to do so necessarily, but we do have a public awareness and professional awareness program which we hope will begin to address this. But you are absolutely correct.

Senator LIEBERMAN. Do we need a legal requirement along the lines that you mentioned?

Mr. BRANDON. I'm not really sure that I can envision requirements, for example, in terms of timing device components, this sort of thing, that would even begin to be realistic. It would infringe too much upon the rights of people to engage in commerce.

Senator LIEBERMAN. I hadn't thought about it until you mentioned it. It's probably very difficult to carry out in a way that is sensible in light of the goal that you have, although the goal is significant. But it's worth thinking about, and I think I'll ask our staff to do that.

In your opening remarks you indicated that what you call nuclear terrorism is one of the priority areas that the Bureau considers, and I appreciate hearing that. I take it that sometimes when we



think of nuclear terrorism, we think of the extreme case of somebody smuggling a nuclear weapon of some kind. But you're really talking about the potential for doing damage to nuclear power facilities. Is that correct?

Mr. BRANDON. Yes. I'm speaking of both, but, in fact, much of our focus is just in the area that you're speaking about, in the potential for damage to our own facilities.

Senator LIEBERMAN. So that in that sense, you've reached the judgment—and I'd like you to talk about it a little bit—that this is a special category of facility. In other words, some people might say to me, "Why are you holding this hearing this morning? Why aren't you worried about coal-driven powerplants or oil storage tanks that might be used as another source of energy?" But I take it that the FBI has decided that there's something different about these nuclear plants.

Mr. BRANDON. Well, we have. One answer, which is not the full answer, is that we're mandated to do that under the Atomic Energy Act. But that's just the beginning. We clearly recognize that were an untoward incident to occur, the threat to the public could be very high, whether it's an explosive device that disperses radioactivity, whether it be the theft of radioactive materials, although it's very difficult, that could be used by somebody. We recognize that this is very important, and we think countering this is very important. It's a major effort on our part.

Do you want to talk to that, Mr. McGrath?

Senator LIEBERMAN. Mr. McGrath?

Mr. McGRATH. I think I'd like to mention, Senator, that part of the things that we do within the FBI with regard to nuclear terrorism cross many different problem areas. We view nuclear terrorism in the entire spectrum of what that threat might be. It may at some time be composed of somebody who is using a nuclear facility as a means of extortion. Maybe they don't really have a nuclear device or they don't necessarily have the capability to do it, but their mere presence in a standoff barricade situation poses a threat to the community in which the facility may be located. That's one type of threat.

Senator LIEBERMAN. And they've chosen it because it's a different kind of facility, its visibility, the kind of fear that many people have about nuclear energy—the unknown, in a way.

Mr. McGRATH. Absolutely, and you know as well as I that the motive behind terrorism is to instill fear, and whether or not you can actually pull off the event is another issue. If you can instill fear, you have accomplished as a terrorist probably 95 percent of what you want to do. Whether or not you succeed, whether you live or die is another issue entirely. So, consequently, nuclear facilities become attractive targets.

We view it that way. The FBI views it that way. We try and think like a terrorist and say, "What would a terrorist be looking for? What would he want to do?" Consequently, we identify various targets, groups of targets within the United States that could pose attractive theaters for terrorists, and we try and design plans and capabilities to neutralize that, mitigate the effects of it with the use of intelligence, and hope to intercept the plan before it takes

step one forward. That's not happening if the intelligence is not sufficient. We assume that may be the case in some instances.

We thereafter embark upon a plan to design emergency response capabilities, coordinate with local law enforcement, indigenous security people on-scene, develop plans for the application of resources, whatever they might be—hostage negotiations, assault teams, the whole spectrum of law enforcement capabilities—and we like to apply those to the situations that we think a terrorist might also be looking at.

Senator LIEBERMAN. Okay. That's helpful. I'm going to ask you to speak a little bit about this incident. In going over your report, I note that there was a group that was apprehended for the planned destruction of power lines leading into the Palos Verdes and Diablo Canyon nuclear powerplants within the last several years. Could either one of you describe that briefly just for the record and the nature of the group, too? I think it's of note.

Mr. McGRATH. It was EMETIC. It's referred to in our terms as EMETIC.

Senator LIEBERMAN. And what does it stand for?

Mr. McGRATH. Evan Mecham, et cetera, et cetera.

Senator LIEBERMAN. Okay.

Mr. BRANDON. I'll find it for the record. This was a group which planned, I think for the purpose probably of publicity primarily, to destroy power lines coming into nuclear powerplants in Arizona, and they undertook these activities, including, as you point out, planning some vague plans anyway to attack nuclear powerplants. This plot was discovered, intercepted, and they were all convicted. The reason behind it, as I understand it, was somewhat philosophical in that they were against nuclear energy.

Mr. McGRATH. That's correct. The name of the group was the Evan Mecham Eco-Terrorist International Conspiracy.

Senator LIEBERMAN. I presume this group did not have the endorsement of Mr. Mecham.

[Laughter.]

Mr. BRANDON. We don't have that indication.

Senator LIEBERMAN. Okay. I was struck by the incident, and I wanted you to testify briefly to it just to show that at least one group obviously has a different orientation than we normally fear from terrorist groups, although, as you know, the arc of terrorism is, unfortunately, a wide one, the sources from which it could come. Nonetheless, it shows that this group targeted a nuclear powerplant facility.

Let me ask you briefly in a final series of questions about the question of road barriers, to the extent that you're able to testify to that. Maybe I should do it somewhat historically at the outset. Do you know why or will you testify to why the flower pot barriers were placed around the Capitol in the mid-1980s and why the White House apparently installed the vehicular barriers around that same time?

Mr. BRANDON. Well, yes, it was to thwart any attempt for somebody to drive a vehicle presumably laden with explosives into certain areas. There's no question about that.

Senator LIEBERMAN. Was it an aftermath of Beirut, do you think, of the Marine barracks?



Mr. BRANDON. Yes, this was in response to Beirut and the sad lessons learned there.

Senator LIEBERMAN. Are there other Federal agencies that take similar precautions, to the best of your knowledge, against truck bombs?

Mr. BRANDON. Yes, there are. We, actually, in the FBI building have a somewhat similar setup to guard against car bombs and this sort of thing.

Senator LIEBERMAN. Do you feel that the—and, again, this is more an NRC question than one for you, and if you don't want to answer it, don't. Do you feel that we'd be in better shape if the NRC required nuclear powerplants to have road barriers at points of access to the grounds of the nuclear power facilities?

Mr. BRANDON. That is a question the NRC will have to answer. I'm sure that they will. My personal experience, based upon some of the offices in which I've served—I was in Puerto Rico, and we were the target of terrorist attacks—is that very measure and every step you can take to harden the target is a positive step.

Senator LIEBERMAN. Yes. Okay. I appreciate your testimony. Is there anything you'd like to add?

[No response.]

Senator LIEBERMAN. Mr. McGrath, you said that part of a terrorist's aim is to create fear, and clearly those who struck at the World Trade Center did just that. Holding this hearing today is not to create fear, but to make sure that we're all working together to do just the opposite, which is to reassure the public that we're doing everything we can to prevent against a terrorist attack, and, second, to send a message to would-be terrorists that the targets are getting harder and that this is not the place to ply their trade.

Again, I thank you and everyone at the FBI, who I think has done an extraordinarily good job in a very difficult circumstance to inhibit terrorism within the United States.

Mr. BRANDON. Thank you, sir.

Senator LIEBERMAN. Thank you.

Now we're going to call, somewhat out of order, but briefly, Mr. Phillip Clark, the President of the GPU Nuclear Corporation, who has a brief video of the incident at Three Mile Island which will help us to set the premise and have an understanding as we then go on to the NRC witnesses.

Senator Kempthorne, I'm sorry, I didn't see that you had arrived. Did you have questions for the FBI witnesses?

Senator KEMPTHORNE. Mr. Chairman, I do just have a couple, if I may.

Senator LIEBERMAN. Please come back, your escape was premature.

Senator KEMPTHORNE. I never thought I'd say to the FBI, "Hold it right there."

[Laughter.]

Senator LIEBERMAN. And they did.

Senator KEMPTHORNE. They did very well.

Mr. BRANDON. My 11-year-old son says that to me also.

Senator KEMPTHORNE. Great. Well, I have a 12-year-old.

Mr. Chairman, thank you very much, and gentlemen. I'm sorry that I was late. I was at another meeting. Let me combine some of

my questions with some questions of Senator Simpson, who could not be here.

Would you explain for me what is meant by a soft and a hard target?

Mr. BRANDON. It's not a precise definition at all, but we try to look at what we think could be a logical target of somebody who might want to commit an act of terrorism, maybe a symbolic target, and then we would try to look at it and say whether or not we think—look at the ease with which somebody could commit an act of terrorism in this instance. We look at the amount of security that's there, whether it's 24-hour security, 7-days-a-week security, whether it's physical security, this sort of thing, and then we somewhat imprecisely arrive at a definition where we say that target is very difficult or, in fact, it's sitting out there all by itself as an easy target. Then we use the terms "hard" or "soft." It's not anything we quantify. There's not a magic formula.

Senator KEMPTHORNE. All right. Thank you. Also, if I ask you a question that has been asked, if you'll just note that, and I'll read it in the record.

Given what is known about terrorist motives, what are likely terrorist targets?

Mr. BRANDON. In a sense, of course, you qualify that by knowing what the motives are. You may go from the Evan Mecham Conspiracy, the antinuclear group, to Hezbollah, the extreme in terms of terrorism. Generally, I think, if there is a generalization that you can make, it quite often is a target that has symbolic value to the group or the individual that would be involved in an act of terrorism. We define an act of terrorism as having, in effect, a political purpose. Not just somebody that decides to throw a bomb, period, but a political purpose. So you look in that sense at something that has symbolic value to a group. That is generally what you see.

Now, I will also qualify—and, obviously, this is a difficult question you ask—I will qualify and say that with some groups you also have to look at whether or not they go beyond symbolism and in fact intend to inflict serious casualties and damage, as we experienced in Beirut, for example, and as has been occurring in London with random acts of terrorism where a number of people have been injured, and as may have occurred in the World Trade Center. So there's kind of a difference. Generally, it's symbolic, though.

Senator KEMPTHORNE. Is loss of life an objective?

Mr. BRANDON. That literally varies from group to group. The thing that we teach and we preach is that with terrorism, particularly in terms of bombing, there probably is no such thing as an act of terrorism which is purely symbolic, because any time you plant an explosive device—and that's what most of these things are—you have something that's mindless. They may not intend to kill somebody, but somebody may be walking by or driving by when the device goes off. It may be 4:00 a.m. in front of a recruiting station someplace where you don't intend to do it, but the danger is clearly, clearly there.

Senator KEMPTHORNE. Are terrorists more likely to go for hard or soft targets?

Mr. BRANDON. Oh, soft targets. There's little doubt in my mind.

Senator KEMPTHORNE. In your opinion, would you please assess the likelihood of a nuclear plant being a potential terrorist target?

Mr. BRANDON. I have mentioned that in general terms. Our current assessment is that the threat is very low.

Senator KEMPTHORNE. Assuming that terrorists wanted to inflict environmental damage on a population, how likely would a commercial nuclear plant be as a target compared to any other industrial site, given the relative hardness and softness of the targets?

Mr. BRANDON. Well, in one sense, to inflict damage over a broad area becomes a target. But one of the reasons we think the threat is low to our nuclear facilities is that we do evaluate most of them as being—in fact, almost all of them as being hard targets. So I think our answer would be that the likelihood remains low.

Senator KEMPTHORNE. Just a final question. Can you think of any other commercial site or facility, excluding Federal Government weapons sites, which are as hardened as a commercial nuclear site?

Mr. BRANDON. There are certainly some military installations around the country that are hardened in the same manner, and a few commercial sites where they're particularly concerned about proprietary information. But generally not a lot, obviously, is coming to mind.

Senator KEMPTHORNE. All right. Thank you very much. I appreciate your responses.

Mr. Chairman, thank you.

Senator LIEBERMAN. Thank you, Senator Kempthorne. With the exception of the U.S. Capitol.

Senator KEMPTHORNE. With the exception of the U.S. Capitol, yes.

Senator LIEBERMAN. And other government buildings that have been hardened in that sense.

Also, you probably have seen the tape before, but what alarmed us about the Three Mile Island incident is the extent to which this lone individual, presumably deranged, made his way through in spite of the fact that the facility is supposed to be hardened. It is, I'm sure, relatively hardened, but we'll take a look at this and then see whether there's more that we can do to make it harder.

Mr. BRANDON. As I said before, you're never satisfied when it comes to looking at security of a space, particularly when you're the target.

Senator LIEBERMAN. Right. Thank you.

Thank you, Senator Kempthorne.

Mr. McGrath, did you want to add anything?

Mr. McGRATH. All I was going to say, Senator, is that we discussed yesterday that within security planning, it's got to be commensurate with the threat level, and that can be determined in many cases just by people remaining current into the world environment. For example, the threat level during the Gulf War certainly was much higher than it is during a time of normalcy within the United States. We would encourage commercial facilities and so forth to respond to that and to have indigenous capabilities to protect themselves more during a high-threat environment than in the normal environment.

Senator LIEBERMAN. I'm sure that's happening. I happened to have been in New York a week or two ago and talked to somebody who's the executive of a company I asked him casually, unrelated to any of this, how much space in the building his company occupied, and he said, "We actually now occupy about 70 percent of the building," and he said, "After the World Trade Center, I'm beginning to think it's not a good idea to have us all in one place."

That's just a small anecdote about the way in which people do begin to think, and they ought to, at least in terms of security. I'm not suggesting that everybody has to separate their office locations, but, at least in terms of security, to harden their targets a little bit, too.

Thank you both.

Mr. Clark? We have two TV sets, which should allow those on that side and those on this side to see what you're describing. Thanks, Mr. Clark, for being here today.

Mr. CLARK. Good morning, Mr. Chairman. I appreciate the opportunity to appear before you this morning. I understand that my presence at this point in the hearing is to provide a context of how the intruder got into Three Mile Island.

Senator LIEBERMAN. That is correct.

Mr. CLARK. I will be available on the panel later, so I will restrict my remarks at this point.

Senator LIEBERMAN. Fine.

Mr. CLARK. Let me say first that our investigation of this event is not complete. What I'll tell you is what we believe, and we feel pretty comfortable with this. But since the investigation is not complete, we may conclude things were just a little different than I will describe to you today.

Before starting the video, I want to describe the TMI site in general terms so that you can understand the video, which was really shot for our use in investigating the event, not for an audience who is not familiar with the site.

The TMI I and TMI II plants are located on an island in the Susquehanna River southeast of Harrisburg. The site can be entered from the south or the north end by bridges. At most times, the south bridge entrance is closed, and normal access to the island is from the north bridge entrance only. That is the route used by the intruder. At the north bridge, just off the road, Route 441, is the guard shack, or the security officer staffed checkpoint. That location is there for administrative control of access to the island and is not part of the required security. I think it was prudent to have it there.

The video is a reenactment of what is known and what we postulate, and I will try to interrupt the video and make a distinction between those two points. To really understand the event I would invite you or any members of the committee or your staff to come visit Three Mile Island at any time and see firsthand not just the route, but the security provisions that we have.

Now, to start the video, the first thing you'll see is the guard shack. The intruder drove right by the guard shack and across the bridge onto the island.

Senator LIEBERMAN. Is there any other kind of security at the guard shack? In other words, is there a cross bar, for instance?

Mr. CLARK. There's the guard shack and also a chain link gate. The gate was open because of a shift change. Now you're driving across the bridge onto the island. When you come to the inner end of the bridge, you can go right or left, and we'll see that he chose to go left toward the plant. He went through a parking area, some industrial kinds of buildings——

Senator LIEBERMAN. How far has the intruder traveled at this point?

Mr. CLARK. A little under a mile to the turbine building.

Senator LIEBERMAN. Are there any barriers along the way here?

Mr. CLARK. No, sir.

Here he's coming out of that parking lot into another parking area. On the day of the event, he was observed at this point. It looked as though he was slowing down and getting ready to park.

Senator LIEBERMAN. Was he observed when he went by the guard's gate at the outset?

Mr. CLARK. Yes, sir.

Now he's faced with the building, so he turns left. That doesn't go very far, so he turns right, which is directly toward the plant. You're going to see some concrete barriers in front of the gate. Those were not there on that day.

Senator LIEBERMAN. Why is that? Well, go ahead.

Mr. CLARK. Now he's going into the turbine building. I guess I'd like to stop right here. We don't normally have barriers there, nor do I think most plants have them. The fence he's about to crash through or he did crash through there is called a protected area fence, the purpose of which is to detect an intrusion, which it did.

Senator LIEBERMAN. It's a chain link fence, basically.

Mr. CLARK. It's a chain link fence. It has associated with it both video and detection devices, so it actually detected him going through the fence. We've got alarms in our security center.

Going back to your earlier question, when he drove past the guard at the shack, the guard immediately called other security forces. We have a mobile force as well as people in the security center. They did not have time to reach that point before the intruder entered.

Senator LIEBERMAN. Was he driving rapidly?

Mr. CLARK. Yes. I'm not sure we now have a speedometer reading for you, but yes.

Senator LIEBERMAN. So what was the point at which your security forces began to actually try to apprehend him?

Mr. CLARK. As soon as he went past the guard shack and there was first a radio alert to the mobile patrol.

Senator LIEBERMAN. Right. But he made his way, nonetheless, into the turbine building, and then when he broke through that chain link fence, which is right outside the turbine building, another level of alarm went off, effectively.

Mr. CLARK. An automatic alarm went off. We have the monitoring of the fence and the gates. The security force had instrumentation or video cameras to alert the security force that the gate had been entered.

Senator LIEBERMAN. What normally happens when a car approaches that outer guard house?

Mr. CLARK. You're supposed to stop and show your badge.

Senator LIEBERMAN. Okay.

Mr. CLARK. I think I'd like to go back just briefly and focus on one frame there. You commented on the four hours to apprehend the intruder.

Senator LIEBERMAN. Yes. What happened after his car went into the turbine building?

Mr. CLARK. That's a picture of a very small part of the turbine building, which is a small part of the plant. I think it helps understand the time it took to apprehend the intruder.

Senator LIEBERMAN. It helps explain the four hours, because there are a lot of places to hide there.

Mr. CLARK. Yes, sir. In addition, the plan fundamentally, our security plan, is to deploy the guard force to protect the vital areas. So the first priority is to protect the vital areas and vital equipment. It's only when that's done that we turn our minds to finding the intruder.

As I show you the rest of the video, I think you'll see that the intruder was hidden down under the main condenser in a very difficult place to find. Fundamentally, we weren't looking hard early in the event.

Senator LIEBERMAN. Let me just ask you to clarify. When you show the entrance to the turbine building, it appears to be a concrete wall there or barriers. Was that open, or did he crash into that, essentially, door?

Mr. CLARK. As he approached the fence, the picture showed concrete barriers similar to what you would see on a highway. Those are not normally there. We put them in place after the event, because the gate was damaged and needed to be repaired.

Senator LIEBERMAN. Okay. Let me go to the next step. Did he actually enter the turbine building? Did his car enter the turbine building?

Mr. CLARK. Yes, sir.

Senator LIEBERMAN. So there was a door of some kind open there?

Mr. CLARK. The door was closed; he drove through it. If you think of kind of a roll-up steel door you might see at a delivery entrance to an office, that's the kind of door. It's there to keep the weather out. It's not a hardened door or barrier.

Senator LIEBERMAN. How far in did he get?

Mr. CLARK. As I recall, maybe 60 feet.

Senator LIEBERMAN. So he drove 60 feet into the building and then exited his car and hid.

Mr. CLARK. Yes.

Senator LIEBERMAN. Just going back to what you said, from your review at this point—and I know it's not concluded—did your security forces secure the vital areas of the building as they're supposed to under the plan?

Mr. CLARK. Yes.

Senator LIEBERMAN. How close was he to those vital areas once he got into the turbine building?

Mr. CLARK. A couple of hundred feet.

Senator LIEBERMAN. Okay. Why don't you go ahead.

Mr. CLARK. Okay. This shows the ladder down which we think he went. He's running straight ahead from the car, and on the right-

hand side you see a ladder, which goes down below. We believe he went down that ladder into an area which is not well-lighted, went forward under the condenser. This shows us recreating it. It's not a lighted area. People are using flashlights. He came to rest where that dark streak is, which is a puddle, where he was found later lying in kind of a curled up position.

Now, we know the route until the car stopped. From where we found him, we postulate that he took the route I just described to you. He was not observed doing that, although we think it's likely that's the way he went.

Senator LIEBERMAN. Was he armed?

Mr. CLARK. No.

Senator LIEBERMAN. And, of course, there were no weapons found in the car, no bombs, no dynamite.

Mr. CLARK. No, sir.

Senator LIEBERMAN. What do we know, at this point, of the individual?

Mr. CLARK. It keeps changing, but I think what we know is he's a fairly local resident and that he had been in a mental hospital. We have not had any association of him with any group. I've heard, although I can't verify it, that earlier in the day he had approached a TV tower and banged on the door or tried to get in and couldn't. Really, the pursuit of that is by the FBI or the police forces, not GPU, so that's largely secondhand.

Senator LIEBERMAN. Can you get from the turbine building into any of the so-called vital areas of the facility?

Mr. CLARK. Yes.

Senator LIEBERMAN. How difficult is it to do that?

Mr. CLARK. The vital areas are protected, by and large, by thick concrete walls and hardened doors, and they require an electronic card for entry.

Senator LIEBERMAN. Thank you. I want to welcome Senator Simpson as the ranking member and ask him and Senator Kempthorne whether they have any questions of you about the factual situation at this time, knowing that you'll be back on the last panel for broader discussion.

#### OPENING STATEMENT OF HON. ALAN K. SIMPSON, U.S. SENATOR FROM THE STATE OF WYOMING

Senator SIMPSON. Mr. Chairman, I thank you, and I have an opening statement that I would like to have included in the record, if I may.

Senator LIEBERMAN. Without objection, your prepared statement will appear in the record.

[Senator Simpson's statement follows:]



STATEMENT OF HON. ALAN K. SIMPSON, U.S. SENATOR FROM THE STATE OF  
WYOMING

THE TRAGIC BOMBING OF THE WORLD TRADE TOWERS BUILDING IN NEW YORK HAS SEARED IN OUR MINDS THAT WE ARE INDEED VULNERABLE TO TERRORIST ATTACKS ON INNOCENT AMERICAN CITIZENS. AS A NATION, WE ARE REMINDED OF OTHER SUCH HEINOUS CARNAGE OF INNOCENTS, FLIGHT 103 BEING JUST ONE EXAMPLE.

THE BOMBING OF THE WORLD TRADE TOWERS IS A TRAGEDY OF THE HIGHEST ORDER. BECAUSE THE BREACH OF THE OWNER CONTROLLED AREA OF THE THREE MILE ISLAND NUCLEAR -ELECTRICITY PLANT OCCURRED JUST THREE WEEKS EARLIER, THE TWO EVENTS ARE BEING JOINED HERE TODAY. TODAY WE ARE INVESTIGATING THE LIKELIHOOD OF A CAR BOMB BEING DRIVEN CLOSE ENOUGH TO A COMMERCIAL NUCLEAR PLANT SUCH THAT THE PUBLIC HEALTH AND SAFETY COULD BE AFFECTED.

IN PREPARING FOR THIS HEARING, I HAVE FAMILIARIZED MYSELF WITH THE "SAFETY-IN-DEPTH" PHILOSOPHY AND PRACTICE OF THE COMMERCIAL NUCLEAR INDUSTRY. I HAVE LEARNED OF THE THREE CONCENTRIC AREAS, EACH OF INCREASING DIFFICULTY TO PENETRATE.

THE OUTSIDE BOUNDARY IS THE "OWNER CONTROLLED AREA" AND IS THE LINE OF DEMARCATION OF THE UTILITY'S PROPERTY.

INSIDE, IS THE "OWNER CONTROLLED AREA" WHICH WOULD BE MORE PROPERLY DEFINED AS THE "OWNER DETECTION AREA". THIS AREA, DELINEATED WITH A CHAIN LINK FENCE EQUIPPED WITH SURVEILLANCE CAMERAS AND DETECTION SENSORS, IMMEDIATELY IDENTIFIES AN INTRUDER.

INSIDE THIS DETECTION AREA. IS THE "VITAL AREA." THE "VITAL AREA" SECURES THE EQUIPMENT NECESSARY TO ENSURE THE SAFE OPERATION AND SHUTDOWN OF THE PLANT WHICH IS ALL DESIGNED TO PROTECT THE PUBLIC HEALTH AND SAFETY.

THE INTRUSION AT THREE MILE ISLAND IS THE MOST SIGNIFICANT BREACH OF A COMMERCIAL NUCLEAR PLANT'S SECURITY SYSTEM IN THE INDUSTRY'S OPERATING HISTORY. YET--AND THANKFULLY--THE VITAL AREA WAS PROTECTED AND THE UNARMED INTRUDER APPREHENDED WITHOUT INCIDENT.

IN MY MIND, THE REAL QUESTION WE FACE TODAY IS "HOW LIKELY A TARGET IS A NUCLEAR POWER PLANT WHICH ALREADY HAS A RIGOROUS SECURITY PROGRAM AND WHICH A TERRORIST MAY CONSIDER A "HARD" TARGET?" THE QUESTION WHICH I WILL POSE OF THE EXPERTS AT THE FBI WILL TRY TO GET AT THE ANSWER TO THIS QUESTION.

IN A WAY, THE QUESTION IS EVEN MORE FUNDAMENTAL AND REQUIRES COMING FACE TO FACE WITH OUR OWN BELIEF SYSTEM. IN OTHER WORDS, "DO WE HAVE FAITH THAT THE LAW ENFORCEMENT COMMUNITY WILL DO THEIR JOB AND ALERT THE APPROPRIATE CITIZENS IN A TIMELY MANNER IN ORDER TO BE PROTECTED? DO WE BELIEVE THAT EMPLOYEES TRAINED TO CARRY OUT SPECIFIC SECURITY RESPONSIBILITIES WILL DO SO WHEN REQUIRED? IN SHORT, DO WE BELIEVE THAT THE SYSTEM WILL WORK TO PROTECT THE CITIZENS OF THIS COUNTRY? I BELIEVE A



CYNIC WOULD ANSWER THESE QUESTIONS ONE WAY AND A REALIST IN QUITE ANOTHER WAY.

IT IS MY BELIEF, BASED ON THE RESEARCH I HAVE DONE, THAT A COMMERCIAL NUCLEAR PLANT IS AN UNLIKELY TARGET FOR TERRORIST, PRIMARILY DUE TO THE SOPHISTICATED SECURITY PLANS AND THE EFFECT OF A "SECURITY-IN-DEPTH" OPERATIONAL PHILOSOPHY. IF WE BEGIN TO TRY AND PROTECT OURSELVES AGAINST ALL CONCEIVABLE THREATS, WE MIGHT NOT GET OUT OF BED IN THE MORNING. AT LEAST WITH REGARD TO NUCLEAR PLANTS--UNLIKE THE WORLD TRADE TOWERS--WE HAVE TAKEN EXTRAORDINARY STEPS TO MAKE THEM SECURE AND WILL CONTINUE TO BE VIGILANT IN THOSE EFFORTS.

Senator SIMPSON. Some things have transpired in these last days with regard to this issue, the breach of security at Three Mile Island, and the terrorist bombing in New York, certainly a tragedy of the highest order. The two events are somewhat joined here today. Our role, in this subcommittee, as I've viewed it in my 14 years on it, is to ensure the public health and safety. That's what we do here with commercial nuclear power in the United States as administered by the Nuclear Regulatory Commission.

I remember in the earlier days of nuclear power, the DBT threat—the design basis threat or design basis for terrorism—has always been on a very high level simply because people thought that was going to take place in America, back in the days of great controversy, great protest, great discord about nuclear energy, its safety, its threat to the world, and some of high drama that was out there at the time. So the safety-in-depth philosophy and practice of the industry I would think is fairly good. We have those three concentric areas, each of increasing difficulty to penetrate: the outside boundary, the line of demarcation of the utility's property; the owner-controlled area; then the owner detection area; then the vital area, and that secures the equipment necessary to ensure not only the operation, but the shutdown of the plant which is all designed primarily to protect public health and safety.

So we find this intruder unarmed, apprehended without incident. One might feel that the industry had a record of effective security system programs through the entire operating history of the commercial nuclear industry, but in my mind the real question is, how likely a target is a nuclear powerplant which already has a rigorous security program and which a terrorist might consider a hard target? Certainly this would be a hard target in terms of hard or soft nomenclature.

So I guess we have more fundamental questions and require face-to-face with our own belief system here. Do we have faith that the law enforcement community will do their job and alert the public and the appropriate citizens in a timely manner in order to be protected, or do we believe that employees trained to carry out the specific security responsibilities will do it, and how well? And do we believe the system will work? A cynic might answer those questions one way and a realist quite another way, but based upon my experience and research, a commercial nuclear plant is an unlikely target for terrorists, primarily because of the sophisticated plans and redundancy and the effect of the safety-in-depth operational philosophy, and if we should begin to try and protect ourselves from all conceivable threats, I think it would probably be a never-ending process.

Unlike the World Trade Tower issue, we've taken extraordinary steps in the past, but I admire the Chairman for holding this hearing and just ask, was the security program at TMI carried out properly? Did it look like it was going to protect the vital area of the plant? Was it a timely response? It took some three or four hours to apprehend the intruder. But in those circumstances and having been in those plants, there are plenty of places you could go, in that area, especially in the dark of any facility.

I just ask that. It's a multiple question, and you can answer it in pieces.

Mr. CLARK. I'll try, and if I miss a piece, please remind me.

We think the security plan did work. We think the security force did what they were supposed to do according to the plan and in fact denied access to the vital areas. Now, this was not a particularly tough test, this one individual who went and hid. Nonetheless, we didn't know whether he was armed, whether there were explosives, and we think we responded well. No doubt when we're through with our investigation and NRC is through with there's, we'll have a list of things where we can do better, and we will go implement those. But overall we think the plan was a good plan, we implemented it well and in fact did protect the vital area and public health and safety.

One of your questions was, will the people there carry out the plan? I think the TMI event shed some light on that question. We thought we had an armed intruder. Certainly, they had to make that assumption. Our security force went out and went through the plant, crawled under the condenser, and they were trained to do that. To me, that's a very positive sign that the security force will do what's needed.

Senator SIMPSON. Well, Mr. Chairman, I interrupted and went ahead of my colleague, who would have been here before I was, and I apologize for that. I'm going to stop right at the moment and defer to Senator Kempthorne. It's great to have him a member of the subcommittee, and I apologize.

Senator LIEBERMAN. Senator Kempthorne?

Senator KEMPTHORNE. Thank you, Mr. Chairman.

Thanks, Senator Simpson.

My questions would center around the lessons learned. Based on the plan that was in place, have you made any changes to it at this point?

Mr. CLARK. We have implemented temporary augmented security requirements at the plant. We did some of that on Sunday, February 7 and more later in the week. As our investigation goes forward, we're making changes of the following kind. Part of the plan is to further restrict access to the vital areas, how many people can get in, how many people have cards. Part of the plan is to automatically reduce the number of people who are allowed into the vital areas during a site emergency. That took, as I recall, a minute to decide to do it and maybe a minute to do it. We figured out a way and have put in place a way that once you decide to it, you can do it in something like 20 seconds. That's illustrative.

We did a technical review of vulnerabilities in the plant. That showed a few areas where we could protect equipment better by making a change in the turbine building or around it. We have implemented those. Yesterday we announced that we have decided to harden the site by putting vehicle barriers, stronger gates at the protected area, at the bridges, and at appropriate points around the fence.

Senator LIEBERMAN. Are you going to put the vehicle barriers next to the guard house where the intruder first went by?

Mr. CLARK. Well, the picture didn't show it very well. There are chain link gates there that can be swung shut. We are going to install a gate there and at the south end of the island that would be much stronger than your normal chain link fence. We haven't

quite decided what, but think a steel I-beam across the middle of it. We will put similar strengthened gates at each gate into the protected area, and we're going to put in some monitoring for the south bridge, which is normally closed.

I've decided that given the event, local concerns, industrial security kinds of issues, I think this is not required by the regulations, but I've decided to do it.

Senator LIEBERMAN. Thank you.

Sorry, Senator. Go ahead.

Senator KEMPTHORNE. Thank you.

Who searched for the intruder and how many, and were they armed?

Mr. CLARK. It was largely our guard force, although we had State police there. I guess I can't give you a precise answer, but it was a combination of our guard force and State police. It was in fact our people who found him. Yes, they are armed.

Senator KEMPTHORNE. You mentioned the different barriers, but the concrete barriers that we saw, you said that those had not been there prior to this incident.

Mr. CLARK. Yes.

Senator KEMPTHORNE. Are they there now?

Mr. CLARK. No. The concrete barriers were removed when the gate was replaced on February 15. Vehicled were placed behind the gate to prevent vehicle intrusion. These will remain in place until we have installed permanent, hardened gates.

Senator KEMPTHORNE. Mr. Clark, at the conclusion of this whole incident, what was your attitude? Was it one of, "This demonstrates that we were ready," or did it demonstrate, "Boy, we were lucky on this one"?

Mr. CLARK. I don't think we were lucky. I think it demonstrated that there was a sound plan, soundly implemented, obviously a lot of little lessons that we can learn from it. I commissioned an investigation at noon on the day of the incident, so it was clear we wanted to learn, and we have been carrying out some other looks. I had a group go look at enhancing the barrier and some of the technical issues of what is the most important equipment. We've done that before. We did it again and found a few more things we wanted to do. So a lot of lessons.

I think fundamentally it worked. I keep hearing or seeing in print things that say security was breached. I don't believe that's a correct characterization. We don't have a plan to stop them at the bridge. I don't think we need it. We didn't have it. The fence he went through is designed to detect intrusion, not to stop it. It did that. And then the guard force and the rest of the plant people implemented the plan, I think quite well.

Senator KEMPTHORNE. If there was another intruder right now, would he get as far today?

Mr. CLARK. I don't believe so, because I think the temporary measures we've taken, such as those concrete barriers or parking the equipment across the front of the gates, I think it is unlikely an intruder would get as far as he did that day.

Senator KEMPTHORNE. Thank you, Mr. Clark.

Senator LIEBERMAN. Mr. Clark, thank you. We'll call the commission now and ask you to wait and come back on the final panel of the morning.

We're glad to welcome for the first time in this Congress members of the Nuclear Regulatory Commission: the Chairman, the Honorable Ivan Selin, the Honorable Kenneth Rogers, James Curtiss, and Gail de Planque.

Thank you all for being here. Let me stress again that this hearing is conducted in the oversight capacity of this subcommittee wanting to make certain that we're all working together to reduce, as much as humanly possible, the risk of damage to these facilities and, therefore, to the public safety.

If I can give you this response, Mr. Chairman, to what I've heard so far, the FBI witnesses indicated to me, as I heard them, that while the threat to nuclear powerplant facilities is low, in their term, nonetheless it exists because of the attractiveness, if I can use that term in a strange way here, the appeal that these facilities might have to people wanting to instill fear. We have at least one incident, although it was a so-called eco-extremist terrorist group, that attempted to do some damage at a nuclear power facility, and we heard discussions of soft targets and hard targets and the hope, obviously, that nuclear powerplants are hard targets.

I must tell you, and this is, obviously, the baseline question here as we all go forward to do whatever we can to protect the public safety, that as I watch that tape of the reenactment of what probably occurred in the Three Mile Island incident, that doesn't look to me like a hard target. It looks to me like a soft target to the extent that one deranged individual made his way past the guard house, broke through the gate, and actually went 60 feet into the turbine building. Thank God that he didn't have any explosives. In that sense, I think, we were lucky.

I know that the other procedures worked, he was apprehended and all that, but it does make me wonder about what's the condition at the many other nuclear powerplants in the country, and to some extent, Mr. Clark, to his credit, in reporting the changes that have now been made at TMI, does suggest that it could have been better beforehand.

So I look forward to your testimony and your response.

**STATEMENT OF HON. IVAN SELIN, CHAIRMAN, NUCLEAR REGULATORY COMMISSION, ACCOMPANIED BY HON. KENNETH C. ROGERS, MEMBER; HON. JAMES R. CURTISS, MEMBER; AND HON. E. GAIL DE PLANQUE, MEMBER**

Mr. SELIN. Thank you very much, Mr. Chairman. We're very pleased to be here today. I'd like particularly to thank you for your opening statement. I found it excellently balanced and raised a some questions, which I'll try to address. Also, as you noted, you have sent us two letters, one which you and Senator Simpson signed and one which you signed as a member of a group.

What I'd like to do, with your indulgence, is just speak for a few minutes in an overview that tries to answer a number of the questions that have been raised both this morning and earlier, and

then the commission will be very pleased to try to answer the specific questions that you bring forward.

Senator LIEBERMAN. Fine.

Mr. SELIN. First of all, we would like to make it clear that we believe that the current safeguard measures in place at NRC-licensed power reactors do provide reasonable assurance of the public health and safety. Otherwise, we would have closed them down a week ago, two weeks ago, what have you. The question that we'll try to address and that I think you're addressing is, will the plants continue to be safe without further protective measures, and, if not, what further protective measures ought to be taken?

Looking back just a little bit, it's ironic that the staff already did have a review under way starting in late 1991, but it was primarily focused on internal access measures and not on external attacks such as truck bombs. We have a feeling that sometimes internal safety considerations are undercut by security considerations, and that it is very important that they be balanced. If it's very hard for operators to get from one place to another place that they might have to go in case of an emergency, that's not security, that's actually a degradation of safety. So in addition to the question of economics, there's always this balance, and that was the main focus of the review that we did start a year and a half ago.

On the other hand, during this review, the staff was asked to consider a proposal by the Nuclear Management Resources Council, or NUMARC, to modify the design basis threat and also to place greater reliance on intelligence information. NUMARC also questioned some of the internal security requirements, and in a couple of minutes I'll try to define more precisely the phrase "design basis threat" that's been used this morning.

Senator LIEBERMAN. Forgive me, but just for a point of clarification, you have pending before you now a request from NUMARC to in fact—I'm going to be pejorative if I say weaken, but to alter and, in some sense, to lessen some of the security requirements at the facilities?

Mr. SELIN. Yes, but the point I am trying to emphasize is that a lot of the security has nothing to do with vehicle bombs and terrorism. So when one says that we're reviewing security, you shouldn't just jump to the conclusion that it has to be strengthened. In some places, we find it excessive, unproductive and, in a few places, actually inconsistent with the more important safety objectives. So security is a broader question, and we'll concentrate this morning on the terrorism aspects.

Senator LIEBERMAN. That's a point well made. You may conclude, isn't it correct, that in some areas you need to strengthen and in other areas you can lower?

Mr. SELIN. It is not out of the question that at the conclusion of our review we might, on the one hand, decide to strengthen some measures, while at the same time modifying or deleting other requirements which have proven to be ineffective. Yes, sir.

Senator LIEBERMAN. Okay. Thanks.

Mr. SELIN. But to go even further, I think it's very important that we say, what is it that the NRC requires of security programs at nuclear powerplants? The objective of our physical protection requirements at commercial nuclear power reactors is to protect the

general public from sabotage-induced releases of radioactive material off the site—in other words, to protect the general public health and safety from radioactive releases. It is not our mission, it is not our job to protect or discourage terrorism per se, nor is it the protection of the rest of the powerplant. In other words, the licensees, not as NRC licensees, but as operators of powerplants, may have other responsibilities to their own shareholders and of their own local law enforcement responsibilities that go beyond the point of NRC requirements.

We are concerned about terrorism on licensed facilities in the sense of what impact a terrorist might have on the potential release of radioactivity that would harm the general public. It's not our responsibility to go beyond that and say, what has to be done to discourage terrorism per se? That's a law enforcement issue, not a regulatory health and safety issue.

In fact, this might be a good point to discuss a little bit about the interaction between security and intelligence. I think it's a very important interaction. For the record, we do not rely on intelligence in the sense that we look at intelligence, we design a design basis threat, but the steps that we require the licensees to put into effect have to be done day-in and day-out. We don't assume that there will be an intelligence that there's a threat to a particular facility.

However, I share your remarks, Mr. Chairman, about the performance of the FBI, and, in a sense, the function of security is to make their job feasible. The security at a powerplant has two functions, generally speaking. One is to make the target hard enough or discouraging enough so that, compared to other targets, it's just not worth going after a nuclear powerplant. There really isn't much sense in making the target harder than that, because presumably terrorists have an overall objective, not a specific objective to get to the powerplant at all costs.

The second is to raise the threshold so that the steps that it would take to penetrate the powerplant, if we were wrong and the terrorists were not deterred, would be observable steps. If you could just drive in a vehicle without any problem whatsoever, go through a gate into the vital area and blow off a few hundred pounds of explosives, there's no way the FBI would ever have a shot at you. But if what it takes is a much more complicated task—amassing more explosives, more difficult timing devices, getting some intelligence about what goes on at the plant—then the security raises the level to the point that the intelligence agencies have a shot.

So it's not just that security depends on intelligence. In a sense, intelligence depends on security as well, and that's part of the reason that we work so closely with the intelligence agencies not only in the design basis threat, but in going on to the activities.

Of course, that does come to the question about how much security is enough, and this is not an area, such as some military areas are, where you could just say, "What does the intelligence indicate?" and then determine the threat against which to protect. Intelligence indicates almost nothing in this case. I mean, if we just went on intelligence, we'd open the gates and go home and not worry about these things. The threat is one part hard data and several parts judgment. We defend against a rational adversary. We



cannot anticipate the actions of a deranged person who doesn't follow logic. We try to say, do we require impregnable barriers or ones that end up by redirecting a would-be adversary to a less well-protected target?

All these considerations are reflected in a design basis threat—in other words, a set of postulated threats against which plant defenses are designed, taking into account actual events in history; the deterrents provided by the security system from an adversary's point of view; the difficulty of installing and maintaining a security system; the availability of other perhaps more attractive targets; and intelligence, when it is available.

The design basis threat is a fiction. It's a creation that the intelligence about threats at powerplants is so low and so imprecise that we have to posit a set of threats and then react to them, and as you've quite accurately pointed out, when you asked Mr. Clark did his security system work properly, the real question is, what was it supposed to do? And it's our job, with your oversight, to set those guidelines and then to evaluate the licensees against that design basis threat.

It's in the absence of a known credible threat that we have to design the design basis threat, and I would like to stress that this basis is a judgmental subject on which past commissions have spent a good deal of effort. Conclusions drawn on the vehicle bomb threat have not been unanimous in the past. I don't know how the current commission will decide the issues under reconsideration, but we will definitely give them a fresh and open-minded look.

One of the questions we were asked is, what would it take for us to change our minds? What I'm promising you, sir, is that we're not going to look at it this way. We're going to start from zero and work up to say, "What is the proper design basis threat?" rather than have the facts come to the point that we are forced to change the situation that we had in January or February. In a sense, although we obviously have to look forward, it is useful to look back a little bit, and the NRC's policy regarding the vehicle bomb threat and the need for vehicle barricades at power reactors has been reviewed on several previous occasions.

After the bombing of the Marine barracks in Beirut, the NRC initiated extensive classified studies with Sandia National Laboratories to evaluate the vulnerability of a nuclear facility to a large vehicle bomb, and also to identify barrier technologies that could be used to protect such facilities. The commission concluded that such protection was not needed at that time. The commission put a lot of dependence on the sturdiness of reactor buildings, on redundant safety systems, on damage-mitigating features of power reactors, reactors that are designed to take a hurricane, a tornado, natural effects, over pressures. They're quite sturdy buildings compared to normal construction. In other words, I would just say that the commission followed its traditional defense-in-depth philosophy.

Considerable weight is also given to the fact that an attack on a nuclear facility is a drastic step, that the potential consequences and the likely political backlash could be directed against the causes of the saboteur. The commission consulted with the intelligence community and heard that the community believed that there was no credible threat of terrorism against nuclear power-



plants. To ensure the best threat assessment, NRC also requested the views of the National Security Council, which in turn requested input from the Departments of Defense and Energy, as well as from the FBI. The thought was that people who might attack a nuclear powerplant might be equally tempted to attack a Department of Energy or a Department of Defense facility, and the feeling was that we shouldn't be going off on our own, but we should be presenting a common front and roughly balanced defenses against such forces to cover up weak links or chinks in the armor by having one be much better protected than the facilities of the other organizations.

Nevertheless, nobody felt all that comfortable that these were final answers. We knew that circumstances might change quickly, so the commission did require power reactor licensees to develop contingency plans to provide short-term protection against vehicle bombs. Not so much on the thought that we would get intelligence and, therefore, overnight these plans would be implemented, but that the view of the world might change, and we'd be better off if we had a running start with these contingency plans instead of having to start over if the feeling about terrorism against nuclear sites changed. The agency verified these plans through inspections in the 1989-1990 time frame.

What are we doing now, I believe, is the question that you've put to us, and as indicated earlier, the commission believes that this is an appropriate time to reevaluate the design basis threat for radiological sabotage. The present threat statement does not address the use of a vehicle to deliver explosives to the site, again, onto the site, nor the threat of a vehicle bomb against a power reactor. It's much more oriented toward stealthy, highly professional intruders sneaking on the site and, therefore—you've heard a lot about detection—that the function of the fence is to detect.

I might draw a classical analogy. We're a little bit like the Gordian priests who had the knot, and we figured nobody could untie it, and then this fellow comes into TMI and he just cut right through the knot. He didn't spend the time untying it. That's something that we need to take another look at. The defenses are designed against stealthy, slowly developing threats, not against rapid threats that just drive up to the fence and through.

One step that we have just taken was to have licensees review their vehicle bomb contingency plans in coordination with the NRC resident inspectors. We have at least two inspectors at every site around the country, who are completely familiar with the operations of the plant. Generally speaking, these plans call for such actions as returning to service any equipment that was temporarily taken out of service which would be used to establish and maintain a safe shutdown condition. In other words, most of the contingency plans are not so much oriented directly against the threat, but mitigating the effects of the threat to make sure that everything you might need if something were to be blown up would be available.

However, a number of licensees did set up, either on a contingency basis or on a permanent basis, barriers, equipment, vehicles, concrete barriers, ditches, or placements of gravel as temporary barriers several years ago. Many of these short-term measures

cannot be realistically undertaken on a long-term or permanent basis. Mr. Clark would have trouble if that first gate were locked during a shift change. I mean, you have hundreds of people coming in and going out of the plant, and it's just very hard to maintain operations if those gates are routinely locked.

Such steps might disrupt important plant maintenance activities, might make it hard to take down equipment for maintenance. They impose additional burdens on employees seeking access, and, ultimately, they diminish overall operation efficiency. If permanent means are required, and the question that we are to examine is whether they are required, these permanent means probably would require a different approach. Not just taking the steps that we've done before and ordering them on a permanent basis, but starting over and saying, what are the appropriate permanent steps, if any, that are called for?

The NRC continues to follow carefully the current security situation. We are evaluating whether an advisory for nuclear plant licensees or whether other actions may be warranted.

Well, where do we go from here, of course, is the main question. The commission is reevaluating the vulnerability of a nuclear power reactor to unauthorized vehicle entry and vehicle bombs, reflecting current facility configurations and technology advances. For instance, since the original studies were completed by Sandia, the concept of storing irradiated spent fuel in independent spent fuel storage facilities has matured. The potential vulnerability of these facilities and other external safety systems will also be studied.

We're concerned about possible changes in the terrorist threat, as reflected, for instance, in the excellent Wall Street Journal article to which you alluded earlier, Mr. Chairman. In that article—and I've talked to the FBI people, and they generally believe that it's an accurate depiction—the new threat is looked at as coming from loose groupings of people of similar backgrounds and beliefs who are not professional terrorists, but who seek terror as a way to strike out against their enemies. Such people are likely to be more unpredictable and, therefore, more difficult for us to deter, a factor that must be reflected both in our design basis threat and in evaluating possible approaches to protection against this threat.

A range of protection options and associated costs will be evaluated, to include such considerations as vehicle barricades at the protected area perimeter and analysis of site-specific stand-off distances to compensate for the effect of a blast. For some power reactors, vehicle barricades could easily be implemented, while other facilities, because of siting or size, might have considerable difficulty in undertaking such measures.

The NRC staff has formulated a work plan and has made it available to the general public. The action plan consists of two phases. Phase I will consist of a reconnaissance, a review not only of the previous studies, but what's new since then, or a bringing-up-to-date of earlier work and a review of recent developments. These findings will be presented to the commission next month. We expect to be able to make an initial determination on the depth and direction for next steps. The second phase might last up to six months and would entail a more profound review and analysis of

the changes in the nuclear power reactor industry, the use of a vehicle, and the design basis threat for radiological sabotage.

We want this process to include participation by the public to the greatest extent possible, although we must realize that certain intelligence and vulnerability information must remain classified. This is the natural corollary of the fact that, as I said, we have one part intelligence and several parts judgment. We believe that the broadest range of judgments that we can go to will be the most helpful to us in deciding what to do with this review. The staff will conduct a workshop to solicit ideas, views, and judgments on various approaches and techniques that can be factored into our formal review. After the staff has completed its analysis and developed proposed options, we plan to present the results to the public during a commission meeting, report to our congressional oversight committees, and then publish our conclusions in the Federal Register.

Mr. Chairman, in your letter to us of February 22nd, you posed a question dealing with the decision by GPU Nuclear Corporation to continue operation of the Three Mile Island nuclear station during the event. That decision is being evaluated by an NRC Incident Investigation Team, or an IIT, which is conducting a review of the circumstances of the event. There are arguments on both sides, but even now, with the benefit of over five weeks of hindsight, we have not found any reason to question the operator's decision to continue operating the plant. The IIT report will be submitted to the commission next month, and we will, of course, be pleased to provide you a copy of the report when it's available.

In summary, we promise an open-minded, fresh review of the design basis threat for radiological sabotage in order to reevaluate the ability of nuclear powerplants to achieve our objective of protecting the public health and safety. We don't plan to reexamine the objective. We don't think that that's our charter. We do plan to do this review with as much public participation and scrutiny as possible, given security requirements, and in a prudent but timely manner.

I should just note that Commissioner Remick regrets that he cannot be here today. He's fulfilling a previous speaking obligation that was originally scheduled for today, and he could not change it.

Mr. Chairman, this concludes our statement. We'd be pleased to answer any questions that you and the rest of the subcommittee may have.

Senator LIEBERMAN. Thank you, Mr. Selin. That was an excellent statement. I thank you for what you describe as your open-mindedness, which I take to be, correctly, a recognition, based on what has happened, including what happened at Three Mile Island, that it's time to take a fresh look at the security arrangements at nuclear powerplants.

Also, I appreciate what you said—it's real common sense, but may be missed—which is that we inevitably rely on counterintelligence to try to deter terrorist acts, but ultimately counterintelligence clearly can't give us 100 percent security, because we simply can't be everywhere a potential intruder or saboteur might be. Therefore, we have to raise our own protective level around these facilities, and I thank you for that.

Obviously, although it's not a final answer, because the process goes on, that's the most hopeful answer to the concerns that we have that Three Mile Island was not adequately protected if this lone intruder could make his way in. Again, thank God that he was just deranged and not armed, particularly not possessed of explosives.

Do any of the other members of the commission want to add anything at this time to the Chairman's opening statement?

[No response.]

Senator LIEBERMAN. I thank you. I'm going to run a five-minute clock on us, if I might, and we'll go around as long as we continue to have questions. This is a chart which tries to show the so-called design basis threat—that is, what the NRC requires of licensees who operate nuclear powerplants, to protect from the external threat, which clearly the commission over the years has been concerned about and taken steps to avoid the threat.

What jumps out at me from this—and this is really history, but it may help what we're getting at now—is that there are two different categories of design here: one for a nuclear powerplant, such as we're focusing on, to protect them from radiological sabotage, terrorism; and then the other is the protection of nuclear fuel facilities separately from threat or diversion, I suppose, basically of stealing what's there, in one sense.

What jumps out is the fact that the design basis requires operators of nuclear fuel facilities to be prepared to defend against the use of land vehicles for transportation, whereas the design basis for the nuclear powerplants does not include a similar requirement to protect against vehicles. It requires protection against violence, deception, stealth, several persons, assuming they're well-trained and dedicated, active or passive assistance by an insider, hand-carried weapons, hand-carried equipment, but no trucks.

I ask the question based on the testimony of the FBI today that most of the terrorist attacks in this country have been bombs in vehicles, and also, obviously, the terrible experience that we had both at the Marine barracks in Beirut and now, more recently, at the World Trade Center.

I don't believe you were at the commission at that time. I know you weren't. But why didn't the design basis requirements for nuclear powerplants include protection against vehicles?

Mr. SELIN. Maybe I should start with the facilities, which are outside the scope of your hearing, but it will set a context. It's not true that this is the threat for all facilities. It's true for the so-called category one fuel cycle facilities, which handle the highly enriched uranium and the material which is potentially of use in making nuclear weapons. There what we're worried about is not just the possibility that there will be some radiation into the atmosphere, but that in fact terrorists could get away with the makings of a nuclear device. So the temptation would be much greater, and the degree of security that is needed is much greater.

Furthermore, most Department of Energy facilities fall in that category, and so we have a common front with the Department of Energy with such facilities, facilities that handle highly enriched fuel, highly enriched uranium, rather than the essentially close-to-

inert fuel that you see at power reactor sites. The threat is much greater because the payoff is much greater for terrorists.

Senator LIEBERMAN. So, is the fear about land vehicles in the nuclear fuel facilities that the vehicle will be used to carry out the nuclear material as opposed to bringing in a bomb?

Mr. SELIN. It's not so much bringing in a bomb. There's very little radiological threat. It's to protect the material that's at the site. So the objective and the goal are quite different in the so-called category one nuclear fuel facilities from what they are at power reactors. At power reactors, I must come back to the point—I'll draw really a graphic example, and that is if somebody drove a bomb into a parking lot, blew it up, and killed 100 people at a power reactor, that's not our problem. I know it sounds just terribly callous to say that. That's a law enforcement problem. That's an FBI problem. That's an intelligence problem.

Senator LIEBERMAN. It's not your problem in the sense that it doesn't affect the facility.

Mr. SELIN. It doesn't affect the health and safety of the general public. The requirements that we set for the powerplants are not all the requirements that they have to meet, but to satisfy us they have to be able to protect against radiation getting into the atmosphere and affecting the general public. We don't set requirements that have to do with the protection of people on the site, with protection of the turbine building, protection of non-vital areas. We have a narrow objective, and the question that we put to ourselves is, are we doing enough to protect against that objective? That's what I mean when I say it's not the protection against terrorism per se.

Senator LIEBERMAN. Well, it's an interesting and important point, because maybe we all should ask whether the objective is too narrow, in fact, the allocation of responsibility between law enforcement agencies and yourselves. I'm not saying you're not doing something you should be doing, because I understand the definition of the objective is too narrow.

Mr. SELIN. There are a lot of places to kill people. Why pick out a powerplant, which already has a lot of security? But in any event, that's not our responsibility under the Atomic Energy Act.

Senator LIEBERMAN. Understood. Let me go back briefly. In 1984—and I presume this might have occurred in the aftermath of the attack in Beirut—the Sandia National Laboratories were asked to conduct a study, and it was titled "An Analysis of Truck Bomb Threats at Nuclear Facilities." Reading from the report,

The results show that unacceptable damage to vital reactor systems could occur from a relatively small charge at close distances, and also from larger but still reasonable-sized charges at large setback distances, which is to say greater than the protected area for most plants.

Is that a correct assessment of the potential damage from a bombing attack on a nuclear powerplant?

Mr. SELIN. Yes, but I hope you'll let me specify.

Senator LIEBERMAN. Please.

Mr. SELIN. What they were asked to look at is what are the distances such that we could be sure there would not be damage to the safety systems, as opposed to saying there would be a high probability that there would be damage to the safety. So the ques-

tion that was put was quite a conservative question. What we asked them to take a look at is, when would a wall to a vital system crumble, or when might it break a pipe or destroy an important piece of instrumentation?

It doesn't mean that the pressure vessel would be breached. It certainly doesn't mean that radiation would be released. But it would be an explosion that might affect, say, the safety system, it might affect the current operation, and we wanted to make sure that we knew the distances so that we would have very high confidence that no damage would result as opposed to the other extreme, which would be high confidence that damage would result.

Senator LIEBERMAN. My time is up.

Mr. SELIN. I didn't mean to filibuster you, Mr. Chairman.

Senator LIEBERMAN. No, you didn't at all. You were responsive. By Senate standards, that was extremely brief.

[Laughter.]

Senator LIEBERMAN. I ask the indulgence of my colleagues just to ask you to complete the record here as briefly as you can. I gather that after the Sandia report the commission considered whether to upgrade the security in relation to the potential for a truck bomb or a vehicular bomb and, ultimately, a couple of years later, voted three to two not to require barriers or other higher levels of protection. Can you just briefly—and, again, I know that you were not there, but from your knowledge, what happened, and why was that decision made?

Mr. SELIN. It was in spite of the Sandia report, but because of the intelligence. I'm oversimplifying. The commission did feel that if somebody had the motivation and the nerve to drive a suicide truck bomb onto the site, they could do a great deal of damage, so it wasn't the lack of damage. It wasn't even the hardness of the vehicles. The feeling was three points: the buildings were hard enough so that you couldn't casually cause a great deal of damage; the second was that to cause such damage was a very high-cost basically risk of killing yourself for the terrorists and that the benefits just weren't great enough—if you're willing to do that, there are a lot of other things that you could do in the country that would produce more benefits, from a terrorist's point of view—the commission is not particularly gifted in putting itself in the shoes of a terrorist, but we do have to try to do that; and then the third point is there was absolutely no intelligence to indicate that this would happen.

But the fact it was a three-to-two vote and there were some other close calls, I think it reflects what I tried to say at the beginning. These are judgment calls, and there's no reason to believe that the judgment might not be changed with just a small change in facts or in background.

Senator LIEBERMAN. So that in fact your review is revisiting that question and many others.

Mr. SELIN. Well, there's new information as well. We're not just going back to second-guess our predecessors and say, would we have done it differently?

Senator LIEBERMAN. Okay. Thanks.

I apologize to my colleagues for going on.

Senator Simpson?



Senator SIMPSON. Mr. Chairman, I too want to greet the commission for the first occasion this session and say, and I think that you might concur, it's been a good commission. These people have restored a good deal of calm from certainly the day I came to this subcommittee as the ranking member, and six weeks after I came here, Three Mile Island occurred.

Mr. SELIN. We don't hold you responsible for that.

[Laughter.]

Senator SIMPSON. I flew up there with Gary Hart in an open helicopter, and look what happened to my hair.

[Laughter.]

Senator SIMPSON. That's what Hart used to say. That's not my line.

Nevertheless, it threw me into a maelstrom of learning, and it threw the commission into a monstrous situation where they were hardly able to respond. I have seen this commission, and I commend the Chairman—Ivan, you've done a splendid job—and Dr. de Planque, Dr. Rogers, and, of course, Jim Curtiss. I know his skills and abilities. He served me as a staff person on this committee for several years, and now Karen Field performs that service. But it's been a good, thoughtful, steady commission, in my mind, and I commend you. I have been a high critic, even at times when others were on the commission that I knew personally and had high regard for.

Let me ask you a question about the United Kingdom. Apparently, they have suffered terrorist attacks for several years. Are their government's regulatory requirements comparable, and how do their nuclear plant security measures compare with ours?

Mr. SELIN. Senator, the United Kingdom sees its threat somewhat differently. They have had a lot of bombs, and probably all of them, although I'm not an expert on the threats there, have been associated with the Irish Republican Army, and their view is that there's no evidence and there's no reason to believe that destruction of the powerplants is an objective of the terrorists. So they basically make a different political judgment from some other countries as to what the terrorists are after and, therefore, how attractive the nuclear plants would be. Their security is considerably lighter than ours is today, both external and internal.

Senator SIMPSON. How about other countries?

Mr. SELIN. They range from—the Swiss make a career of defending themselves against non-existent threats, and they've carried this out in their powerplants.

[Laughter.]

Mr. SELIN. The plants are surrounded by berms, by hills. They have very, very strong security, much stronger than any of the advocates in the United States would have the American powerplants go to.

The Germans are a little bit more like the Swiss. The French don't even allow the guards to be armed. They have a very strong tradition—not just a gun control tradition, but a very strict view about what private citizens can do in the way of security. They put a very heavy weight on communications between the Gendarmerie and the CRS—effectively sort of like the FBI, with some uniformed people—and the security people. They work very closely, and they

just assume they'll get people through the plants when they need to.

In other words, looking abroad, it's very hard to draw any conclusions. There's a whole range of points of view. I would say they probably are more affected by something you might call the national character of the countries than any difference in the perception of the threats.

Senator SIMPSON. What kind of basic drill does the NRC use, if they do have a drill? I know there are many drills that are impressed upon the commercial facilities, hundreds of them, but what do they have in the way "terrorism"?

Mr. SELIN. Well, we spend a lot of time making sure that the plans that the licensees have are in fact capable of being carried out. We don't spend so much time saying, if the plans are carried out, will they meet the objectives for which they were set up? There's at least an annual security inspection, actually probably about two or three visits per site. It's a detailed review to make sure that the licensees can and do in fact perform what's in their plan. At the time a plant is licensed, then once over a seven-year period—this started in 1982—there was a broader review to say, if these plans are carried out, are they consistent with the general guidance that we have given the plants?

But I should emphasize, as Senator Lieberman has, that the design basis threat does not include vehicles. It's possible that GPU did exactly what we told them to do and this fellow could still drive the vehicle up to the turbine door.

Senator SIMPSON. Just one question, because I have exactly 20 seconds left. What is your understanding of the costs of security upgrades to prevent gate crashing? And do you allow the utility to just go forward as they wish perhaps to increase security, regardless that they have met your standards already? What do you allow to go forward? Is it approved by you? Obviously, Three Mile Island becomes a focal point for a troubled mind.

Mr. SELIN. Yes, sir. The answer to the second question is easy. They can do more than we require. In fact, it's sensible for them to do more than required, because, as I mentioned to the Chairman, all that we require them to do is protect the vital areas, whereas they may have other objectives to protect more. Our approval would be more to make sure that these security measures don't get in the way of safety measures, that they don't make it unduly difficult to get from the control room to the shutdown panels or the turbine room.

As far as the costs go, it costs on the order—it depends, of course, on how you do it, but it would cost on the order of \$75,000 to \$100,000 per gate to put up barriers that can be raised and lowered very quickly so that under normal circumstances vehicles can come in and out as freely as you wish them to, but not more freely. Barriers cost about \$20 to \$30 a foot, so if it is the extreme case that you had a plant where you wanted to put up a barrier all around the plant, you're only talking about \$100,000 for the cost of putting up a barrier. In fact, in many plants the cost would be less, because there would be hills, there would be channels, there are rivers, there are creeks. So if you just do a fresh cut, you're talking about on the order of \$500,000 to \$1 million per site.



Unfortunately, there's something that sticks out. I mean, at one powerplant there might be a water intake system that is also important and is not within that perimeter that would cost a lot to protect. In another plant—Mr. Clark mentioned to you he's on an island, and he still has seven gates into that plant. If you take \$100,000 per gate and you're going to keep all those seven gates—but you're talking about \$500,000 to \$1.5 million at one time.

Senator SIMPSON. Thank you, Mr. Chairman. I appreciate your courtesy.

Senator LIEBERMAN. Thank you, Senator.

Senator KEMPTHORNE?

Senator KEMPTHORNE. Thank you, Mr. Chairman.

To pursue the line of questioning that the Chairman had started, let me just condense it down to this question. In the Three Mile Island situation, since that's what we've been focusing on, could a vehicle bomb have caused damage sufficient for a potential release of nuclear material at Three Mile Island?

Mr. SELIN. Yes, sir.

Senator KEMPTHORNE. What would be the impact?

Mr. SELIN. It probably would have killed the driver of the vehicle, and that's the point. I mean, we argued that based on the lack of intelligence and our first principle, the cost of doing this damage just wasn't worth it, and that's why the vehicle bomb is not, as we speak today, in the design basis threat. What would be the public health and safety impact?

Senator KEMPTHORNE. Yes.

Mr. SELIN. Probably nothing, but you can't be sure. In other words, the most likely thing would be that the wall would have been damaged, there would have been serious damage to the emergency systems, the basic systems would have worked okay, the plant would have come down, and there would have been no radiological damage. On the other hand, it's not the bomb per se. If you have the bomb, you might have a fire, a lot of other things going wrong. It's exactly the time in which you wish you had all of your defense-in-depth available, because you're stressing the system.

So the answer—you asked the question, could it have produced damage, and I said yes. If you say would it have produced damage, I'd say probably not, but the risk would be much greater than we would normally accept in a powerplant. The damage would probably have been to the emergency systems, to some of the safety systems, and then you'd be skating on very thin ice. You would have to take the reactor down, and you would do so when you didn't have your normal backup.

Taking the reactor down is a very stressful situation. I don't mean the people can't do it. It happens all the time. But that's when everything has to work properly. In a sense, you're most vulnerable during the time in which you are interrupting a chain reaction. It means you're not generating electricity in the plant, so you must get electricity from off-site. You're going to lose the steam that you're generating, and many of your devices run on plant-generated steam. So you're really relying on your secondary systems and your off-site systems during the time in which you're shutting down the reactor, and if you've had damage, your risks are much higher than they would otherwise be.

Senator KEMPTHORNE. To ask you, then, a hypothetical question, if the objective of a terrorist was to wreak havoc and cause great loss of life, would you suggest that there are sites other than a nuclear facility that would bring about that objective?

Mr. SELIN. May I rephrase your question? If it were to wreak havoc, cause great loss of life, and have pretty good confidence that either the terrorist wouldn't get killed or that it would work, the answer is clearly yes. I mean, you could go to the downtown area of any town in the country. When you asked that question or similar questions of the FBI office, he put a big stress on symbolism, and we really can't guess how much the symbolism of blowing up Three Mile Island compared to the World Trade Center would count in somebody's mind.

But it's true that you could do a lot of things in a powerplant with some confidence that you would not like to see happen, but compared to what you can do elsewhere, these are—I mean, they're not hard targets in the sense that you saw how easily Mr. Nigh got onto the plant. But if you said, what could he have done in downtown Harrisburg, you know, our plant had two levels of defenses, had a bunch of armed people around, a lot of things that he wouldn't have run into.

Senator KEMPTHORNE. All right. So based on that, then, this projection that it could cost anywhere from \$500,000 to \$1 million to retrofit these plants, do you feel that cost is justified at this time?

Mr. SELIN. Well, that's what we're going to look at, Senator. I mean, I could take two extremes. One is that you have \$2 billion or \$3 billion worth of investment, so what's another \$1 million or \$2 million? The other is that you've got 70 facilities around the country, and \$100 million adds up to—I mean, this is not just a one-time investment cost. You need guards, you need to pay people. So we're talking about \$100 million, plus a couple hundred million dollars a year in operating costs on something that we casually induce.

So the answer is you can't say it's so trivial or it's so expensive that it's out of line, so we have to look at the facts, and that's what we propose to do, sir.

Senator KEMPTHORNE. Many things related to commercial nuclear facilities can cause a great deal of fear or anxiety among the public. Given your estimation that there is, at this point, no reason to believe that nuclear facilities are a likely target for attack, do you believe that you can conduct the forthcoming review through public hearings without generating undue fear and anxiety in the public's mind?

Mr. SELIN. I think the public is already fearful and anxious, to tell you the truth, and the fact that we would take the facts, put them out on the table, and consider them in the open has got to be helpful. I think if we just walked away and said, "You may be scared, but we're not, and we're going to do something, and we'll come back and tell you what we decided a year from now," that would cause a lot of anxiety for me at home, I'll tell you that.

No, I think our approach is that whatever the facts are, we're better off having them on the table, since people are nervous anyway.

Senator KEMPTHORNE. Good. I appreciate your responses.

Mr. SELIN. Thank you, sir.

Senator KEMPTHORNE. Mr. Chairman, thank you.

Senator LIEBERMAN. Thank you, Senator.

Mr. Chairman, I must tell you that I found your answers to Senator Kempthorne to be hair raising, honest and direct, but the thought—and, again, I don't want to alarm, but the thought that if the individual who broke through into Three Mile Island had a bomb in the truck, that it could have resulted in a radiological release and some damage to the plant, which I guess is obvious, but hearing you say it, to me, it makes me wonder why we didn't have the requirement before. But we certainly appreciate the fact that you're reviewing, and my own bias here is that it's worth the amount of money we're talking about to prevent that possible occurrence, even though it is of a low probability.

To that extent, I just say thank you to the folks at GPU. I'm reading from their press release of yesterday. They're going to implement the recommended security enhancements at TMI immediately, targeted for completion by mid-summer, at an estimated cost of about \$1 million.

Mr. SELIN. One of the things that concerns Mr. Clark is that he'll do all these steps and then he'll find out we'll require something different, and he'll have to do something else. He's shown quite a bit of courage in moving ahead.

Senator LIEBERMAN. Yes, I agree with that. That's why we appreciate your review and look forward to the results and, obviously, hope that you can move it as quickly as possible, while also doing it thoughtfully. We don't want to rush you beyond what's appropriate.

Let me just ask you one final question. Last December, December 21, 1992, to be exact, the nuclear industry petitioned the NRC to change regulatory requirements in a number of areas, including security. In the document filed in support of the petition to change security requirements, the industry urged the NRC to, and I quote, "remove the security requirement to maintain vital area door locks and alarms as part of the physical security plan." The petition then states further that "Several NRC regulatory effectiveness reviews have concluded that locked vital area doors would delay the external threat by only 10 to 15 seconds. Vital area doors, therefore, add little value to the protective measures against the internal and external threat." The industry, therefore, recommended or asked that the vital doors not be locked.

I gather you're considering it now.

Mr. SELIN. Mr. Chairman, we are under no conditions considering making it easier for an unauthorized individual to get in and out of the vital area. I think you will have to ask NUMARC exactly what they meant. What we are concerned about is two things. One is that these vital area doors not impede the motion of workers. I was at Sequoyah Plant the day before yesterday. For a person to get from the control room to the turbine floor, they had to go down 72 steps, come around, and go up 72 steps. That may be good security, but that's not good safety. So we're very concerned that the so-called perimeter defense—by that I mean the perimeter of the vital area—be impervious to untrained peoples getting out, but be much easier for the safety people to get in and out.

Second, is there a lot of emphasis on the redundancy of barriers within the vital area from one part to another, and it's not clear what the right answer is. The NRC has in the past just put in three new rules since those were set up. The first is we have the fitness-for-duty rule, which reduces considerably the possibility that somebody on the job be suffering from the effects of controlled substances, from drugs; the second is a rule on criminal investigation of background so that the licensees have to do more background information to keep track of who they hire and who the people are; and the third is a rule which has to do with people who will have access, how they have to be monitored, how they have to behave, et cetera. In other words, we believe there's much more confidence that the people who do have access to the vital area will be reliable people than there was when these set of rules went up.

So attention is being paid to not having so many, you could say, redundant or overlapping barriers within the vital areas. But I don't believe the commission is seriously considering reducing the barrier in and out of the vital areas.

Senator LIEBERMAN. So you would not agree with what the suggestion seems to be in the petition, which is that the vital area doors are of little value to the security—

Mr. SELIN. I think there might be a more technical implication, because there's been an argument about whether you should have key cards or physical keys or what have you. So I'm a little reluctant to characterize exactly what NUMARC recommended. But from our point of view, we believe it should be very hard for someone not authorized access to get in and out of the vital area.

Senator LIEBERMAN. Right. Because one of my concerns was—or, really, the question—whether an intruder inside the protected areas could penetrate the vital doors in 10 to 15 seconds.

Mr. SELIN. I'm not an expert on security, but I don't believe that that's true. If it is true, we certainly would have to take a look at that.

Senator LIEBERMAN. Thank you very much. We look forward to continuing to work with you. Again, I thank you for this serious review you're giving this serious question.

Mr. SELIN. Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you.

We'll call the final panel now: Mr. Eldon Greenberg, testifying on behalf of the Nuclear Control Institute; Mr. Joe Colvin, President and CEO of the Nuclear Management and Resources Council, who's accompanied by Mr. Clark; and then Dr. Bruce Hoffman of the RAND Corporation.

We welcome you this morning. We thank you for your presence and patience. We thank those of the witnesses who had to readjust travel plans as a result of the postponement of the hearing by a day because of Senate scheduling. We look forward to your testimony now.

I hope you'll understand if I run the same five-minute clock on you that I've been running on us as a general guideline. There's supposed to be a vote at 11:30. If we do this right, we can get through at least your opening statements before I have to go to vote.

Mr. Greenberg, why don't you begin.

STATEMENT OF ELDON V.C. GREENBERG, ON BEHALF OF THE  
NUCLEAR CONTROL INSTITUTE

Mr. GREENBERG. Thank you very much, Mr. Chairman.

My name is Eldon Greenberg. I'm a partner in the Washington, D.C., law firm of Garvey, Schubert & Barer, and I'm here representing the Nuclear Control Institute and the committee to Bridge the Gap. I understand that my written statement and the attachments will be submitted for the record, and I'd like to briefly summarize our position. My focus will be on the truck bomb threat and initiatives needed to upgrade current levels of security.

Our basic position, and it's one that we have advocated for a number of years, is that the current security regulations at nuclear powerplants provide inadequate protection against what we consider to be the real threat posed by truck bombs to plant security; that one cannot rely on advance warning to provide the necessary lead time to respond to that threat, and I think that was revealed in the tape that we saw this morning of the TMI incident; and that the Nuclear Regulatory Commission must mandate permanent measures to upgrade security at licensed facilities.

The Nuclear Control Institute and the committee to Bridge the Gap have been working on this issue for almost a decade, seeking to persuade the Nuclear Regulatory Commission to move ahead vigorously and adopt measures which would protect against this very serious threat. Our hope today is that, in light of the TMI incident and in light of the World Trade Center incident, the time for change has arrived and that the Commission at long last will move ahead to adopt the kind of protections which we believe are needed.

As has been pointed out during the course of the hearing this morning, this is not a new issue. This issue has been on the table for some 10 years. Five years ago almost to the day, there was a hearing held by Congressman Gejdenson in the House. We went through much of the same testimony that was gone through today, talking about the nature of the risk and the protections needed and the costs. We talked about the Sandia study and the failure of the Commission to move in the mid-1980s to adopt new regulations in light of that study. We hoped then that the Commission would move to adopt tighter security regulations. It didn't do so. We ended up instead only having contingency plans required of the utilities in 1989.

It is fair to say that we were dissatisfied with what was done, and, consequently, in January of 1991 we filed a petition for rule-making with the Commission. We hoped the Commission, in light of that petition, would adopt new rules. Unfortunately, in June of 1991 the Commission denied our petition to upgrade security regulations. My clients, however, are very persistent, so again in the fall of 1991 we filed an additional request before the Commission, this time asking the Commission at least to ask the powerplant operators to evaluate their current security protections against the risks of sabotage events beyond the design basis. That request, too, was denied at the end of December 1991.

The upshot is that after 10 years, as of 1993, we still have the status quo with respect to protections against the truck bomb threat.

Now let me turn to the implications of recent events at TMI and the World Trade Center. I don't intend to belabor this point. I think the point has been well made during the course of the hearing this morning that the basic premises which the Commission has relied on to justify non-adoption of new measures have essentially been destroyed by what has happened in the last month.

First, there was a belief articulated by the Commission that there is no credible threat of truck bomb attacks in the United States. I think both the events at TMI and the World Trade Center demonstrate that this simply is not a belief upon which one can rely to any extent. Second, the Commission stated that, if such a threat became credible, we would have enough advance warning from intelligence agencies to provide ample time to upgrade security. It's clear in both instances we didn't have ample time to upgrade security to protect against an increased threat level.

In light of what happened at TMI and the World Trade Center, we wrote the Commission and again urged the Commission to act to upgrade security measures, and on March 1, to its credit, the Commission began moving ahead with a reevaluation of the current design basis threat. Our concern here, while we are encouraged by the NRC's actions, is that the NRC may not be moving vigorously enough. It has chosen to review rather than to activate truck bomb contingency plans. The proposed time table for reevaluating the design basis threat is over an extended period. It raises questions whether the regulations will in fact be upgraded in the future. We don't want to see a repeat here of what happened in the 1984 to 1988 timeframe, where the Commission undertook an evaluation, but ultimately did very little.

So our initial response is, yes, we're encouraged, we want to see the NRC move ahead, but we think we need vigorous oversight from Congress and the public in order to ensure that realistic actions are in fact taken to upgrade security at powerplants and we don't simply end up with another series of reviews and evaluations, but no concrete improvement in powerplant security.

Senator LIEBERMAN. Thank you, Mr. Greenberg. I assure you that this subcommittee will do its part to provide vigorous oversight, in your term, of this process.

Mr. Colvin, good morning.

**STATEMENT OF JOE F. COLVIN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NUCLEAR MANAGEMENT AND RESOURCES COUNCIL, ACCOMPANIED BY PHILLIP CLARK, PRESIDENT, GPU NUCLEAR CORPORATION, PARSIPPANY, NEW JERSEY**

Mr. COLVIN. Good morning, sir.

Mr. Chairman, I'm Joe Colvin. I'm President and Chief Executive Officer of Nuclear Management and Resources Council, NUMARC. For your information, NUMARC is the organization responsible for both the coordination and the management of combined resources of all U.S. nuclear utilities in the development of generic regulatory, technical and policy issues and their resolution. We thank



you for the opportunity to appear before you today and provide some of the industry perspective on nuclear powerplant security and describe some of the measures that we believe protect public health and safety.

My detailed written statement was provided to the committee for the record, and I'd like to focus on two main points: first, that the current nuclear plant security arrangements and measures we have in place provide adequate protection for public health and safety; and, second, that, at least to date, no credible analysis of the recent events at either Three Mile Island or the World Trade Center have yet been completed that suggest an increased risk to public health and safety from vehicular intrusion into nuclear powerplant protected areas.

I firmly believe that public health and safety are protected because security arrangements at nuclear powerplants are extensive. Moreover, plant security is just one of the broader defense-in-depth approaches for safety employed in our industry. Extensive safety measures to counter potential external threats have been established, as we've heard this morning, including physical protection barriers, illuminated isolation zones, well-trained and well-equipped guards, surveillance and patrols of perimeter and protected area fences, intrusion detection aids, bullet-resisting barriers to critical areas, safeguards contingency plans for dealing with threats, and a tactical response reaction force.

I think, as Chairman Selin appropriately pointed out this morning, that the security regulations that we put in place at commercial nuclear powerplants really focus on the prevention of radiological sabotage as compared to addressing the potential theft of highly enriched uranium or weapons-grade material.

As I noted earlier, nuclear powerplants are designed with the philosophy of defense-in-depth, and the security measures are just one of the elements that, in my belief, protect the public health and safety from attempts at radiological sabotage. As has been discussed earlier, the public is also protected by plant design, physical barriers, operational and safety procedures, and formal emergency plans. These safety measures are further supported by continual training, and are tested and evaluated by ongoing assessments of program effectiveness and by regulatory inspections.

Many of the structures that have been designed to keep radioactive material in fact keep saboteurs out. Reinforced concrete containment structures, coupled with redundant safety and shutdown systems, have been designed to permit the vital areas of a nuclear plant to withstand the impact of events ranging from earthquakes and hurricanes to tornadoes and floods and even, in some cases, commercial airplane crashes.

NRC nuclear plant security requirements are based on the concept of the design basis threat, as we've heard today, and that threat assumes that the plant will be attacked by a highly trained, well-armed paramilitary group. As we've heard, their goal would be to damage the plant so that radioactive material would be released in a way that could endanger public health and safety, and it also assumes that the group of outsiders could be helped by an insider with access to areas of the plant that contain safety systems.

Since 1977, when the design basis threat was formulated, the NRC and the industry have developed regulations as well as programs to address the insider threat. As Chairman Selin pointed out, all utilities are required to have extensive personnel screening programs that include drug and alcohol testing, psychological evaluation, and security clearances which include FBI criminal history checks. All of these checks must be passed successfully before an individual is granted unescorted access to the protected areas of a plant. With this level of scrutiny, we believe that our work force has as much reliability as can be reasonably achieved, and as a result, we requested that the Commission reassess the insider threat and the measures that we have put in place to protect against that.

The other component of the design basis threat is external, and that's the threat from a terrorist group. NRC and FBI analyses have concluded that U.S. nuclear powerplants are unlikely targets for terrorist attacks. In fact, as the FBI indicated, terrorists assess targets that are most vulnerable and select operations that pose minimum risk to them with a maximum chance of success. The NRC has no record of radiological sabotage attempts against any nuclear U.S. powerplant, and, indeed, we don't know of any attempt against an operating nuclear powerplant anywhere in the world.

Turning now to the recent events at Three Mile Island and the World Trade Center, you asked the question, have these events caused us to reconsider either our confidence in the adequacy of the current security requirements or our recommendations for regulatory improvements? The answer is clearly yes. However, when asked whether those reconsiderations would have resulted in a lack of confidence in our current requirements, the answer is clearly no. We continue to believe the present regulations and defense-in-depth are more than adequate to protect the public from the release of radioactivity due to acts of sabotage.

NRC is currently reassessing the threat from vehicular bombs, and we await the results of that assessment. I would like to point out, as we've heard earlier, that this is not a new issue. NRC and the industry have addressed the issue of vehicular bombs several times, both in the development of the regulations in 1977 and in guidance to the industry since. As a result, each utility has modified its security procedures to address the possibility of a vehicular bomb. NRC reviewed this again in 1991 and concluded no changes were necessary.

As you have heard, the industry has asked for a review of security regulations, but we are not asking the NRC to reduce the effectiveness of security at nuclear powerplants. Many of the current regulatory requirements and underlying assumptions are inconsistent with more recent regulations and with hundreds of reactor-years of experience accumulated since the design basis threat was formulated. We performed a comprehensive review and identified six specific requirements that, in our view, are no longer necessary or that distract both NRC and industry resources' attention from other areas more important to nuclear plant safety and the protection of public health and safety. As you indicated, Mr. Chairman,



those were submitted in a December package to the Nuclear Regulatory Commission.

Mr. Chairman, in conclusion, I hope that my remarks will be useful in your deliberations. Our industry is committed to provide safe, reliable electricity from commercial nuclear plants. I believe the defense-in-depth inherent in the design and operation of our plants, with security as an integral part of this, is the underpinning of this commitment. Thank you for your attention.

Senator LIEBERMAN. Thank you, Mr. Colvin.

Dr. Hoffman, I think you had to change some travel plans particularly, so I want to give you a personal thank you. I appreciate you being here.

Dr. Hoffman is from the RAND Corporation, is an expert on terrorism, and has done some work particularly on the terrorist threat to nuclear facilities.

Welcome.

#### STATEMENT OF BRUCE HOFFMAN, RAND CORPORATION, SANTA MONICA, CALIFORNIA

Mr. HOFFMAN. That's correct. I've led RAND's research on the threat of nuclear terrorism since 1985, in fact.

Let me make sure that my written testimony is entered into the record.

Senator LIEBERMAN. Without objection, your prepared statement will appear in the record.

Mr. HOFFMAN. Thank you.

The analysis contained there differs, I think, or diverges somewhat from much of what we've heard previously. Let me also say, as you well know, RAND has long been involved in these issues, but the views that I will express today are my own and do not necessarily represent those of RAND or our sponsors.

In my view, first, the World Trade Center bombing marks a watershed both in our and in others' perception of America's vulnerability, and that's what I'd like to very briefly discuss. The FBI, I think, correctly alluded to the point that the vast majority of terrorism in the world in the past has largely been symbolic—that is, directed against inanimate objects, things, not so much against people—actions designed to call attention and generate publicity for the terrorists and their causes. That's certainly true, but at the same time, that ignores, I think, two very significant terrorist trends that unfolded in international terrorism during the 1980s.

First, the total volume of terrorism throughout the world increased by a third in the 1980s compared to the 1970s, but even more worrisome, during the same period of time, terrorists killed twice as many persons. This trend toward increased terrorist lethality is reflected in three other statistics: a 75 percent increase in the number of individual terrorist incidents that resulted in fatalities in the 1980s compared to the 1970s; a 115 percent increase in the number of terrorist incidents that individually caused five or more deaths; and, indeed, the 135 percent increase in the number of terrorist incidents that caused 10 or more deaths. Terrorists undeniably, when they act, are killing more people.

I would argue that if terrorist lethality continues to increase, the constraints, both self-imposed and otherwise, on terrorists may continue to erode as well, and this may push them more toward not only the nuclear domain, but, conceivably, use of chemical and biological weapons. Especially if you mix in religious or ethnic fanaticism, these types of motivations could cause terrorists to overcome the psychological barriers to mass-murder that a radical political agenda, for example, prevented them from doing in the past. Moreover, State sponsorship in particular could provide these types of terrorists with the incentives, capabilities, and resources that they previously lacked for more ambitious operations in the nuclear domain. Indeed, combined with intense ethnic enmity and a strong religious imperative, this could prove very deadly.

How does all this affect the World Trade Center and the Three Mile Island issue? First, let me say that I think our sense of immunity, however illusory it was in the past—and the FBI statistics this morning, I think, depicted a very impressive string of successes against terrorism, but what they didn't show is since at least the mid-1980s, from the Middle East, terrorists have increasingly been coming to the United States to attempt to carry out attacks. The FBI fortunately has been very successful in thwarting those, but this was one operation where the terrorist were able to carry out their attack, and I think that has a number of implications.

On the one hand, I think our psychological defenses have been breached. Terrorists now know it's possible to strike in the United States. Not only that, they know that an act of terrorism in the United States such as along the lines of the World Trade Center is guaranteed to provide them with the maximum attention and publicity: tremendous media success, if nothing else. Also, too, I think, that terrorists have successfully acted now, and the perception that is long believed to be prevalent among foreign terrorist groups about the difficulties of acting in the United States have arguably eroded forever.

Furthermore, despite the accused bombers' almost comical ineptitude in avoiding capture, the fact remains that they were able to kill six people, wound more than 1,000 others, cause millions of dollars in damage, and shake an entire city's, if not a country's, complacency. Indeed, if amateurs using ordinary commercially available materials can fashion a simple bomb and cause so much damage and destruction, one shudders to think what professional terrorists, the real first-string, could accomplish.

Finally, in this respect, the evidence thus far revealed, in my view—although it's still under investigation, but in my view—may represent only the tip of an iceberg. In the first place, the suspicious transfer of funds from abroad just before the bombing raises the possibility not only of foreign involvement, but perhaps of foreign direction in the terrorist attack. Second, the fact that since 1985 at least two other persons who worshipped at the same mosque as the bombers have similarly been involved in terrorist or terrorist-like incidents is very disturbing.

Just two brief examples. In 1985 U.S. Customs agents arrested a member of that mosque who was attempting to export 150 pounds of C-4 plastic explosives to Palestinian terrorists in the Occupied Territories. The 1990 assassination of Rabbi Meir Kahane, and now

this incident, suggests perhaps that the World Trade Center bombing is not an isolated incident, but part of some wider, long-term conspiracy perhaps involving additional persons both here and abroad.

Finally, in respect to the specific Three Mile Island incident, and then I'll conclude because I realize I don't have any time, I would point out that the February 7th incident sounds a very cautionary note. Much like the amateurish terrorists who caused so much damage and destruction at the World Trade Center, one similarly shudders to think what professional terrorists, well-armed and trained in combat skills, driving something more formidable than a Plymouth station wagon, could accomplish. And, indeed, what message does this send to terrorists in the future if they, too, will conclude from the Three Mile Island incident that the defenses and protective measures around our Nation's commercial nuclear facilities are indeed permeable?

Therefore, I think the Three Mile Island incident—I would agree with Mr. Greenberg—does underscore a potentially serious gap in the design basis threat in that it does not provide for vehicular intrusion.

Thank you.

Senator LIEBERMAN. Thank you, Dr. Hoffman.

There is a vote on, and I'm going to go over and vote, and we'll be back to have questions for the panel.

Mr. Colvin, my dedicated staff tells me that I should not discriminate against you in offering thanks for changing travel plans, that you also did that as well, so I thank you for that.

The hearing will stand in recess.

[Recess.]

Senator LIEBERMAN. The hearing will reconvene again. I thank you for your patience. That is the last vote of the day, as they say, so we'll be able to finish up without further interruption.

Dr. Hoffman, let me begin with you. We've heard a lot of testimony today about whether nuclear powerplants are hard or soft targets, whether the threat is low or more than low, whether it's ultimately reasonable to spend more money to protect against the threat. How do you come down on those questions at this point?

Mr. HOFFMAN. Well, frankly, after viewing that tape and the news about Three Mile Island, it's hard to regard Three Mile Island in particular, and perhaps other plants, as hard targets any longer. I'd say they were pretty soft to me.

Senator LIEBERMAN. Yes, I agree. So that based on what you know—and you're unique in this, having both studied nuclear powerplant facilities and being involved in work on terrorism generally—is the threat level low? Is it unlikely that a terrorist would choose a nuclear powerplant as compared to, for instance, what one of my colleagues said, a building in down Harrisburg?

Mr. HOFFMAN. I think if they thought they could penetrate the facility, if they thought they could do something, if their main attack didn't fail and they were able to do something that generated a tremendous amount of attention, I think they would. The main point is—I mean, I would agree with the NRC that I would be surprised if terrorists attacked a commercial plant seeking to blow up the reactor somehow and cause a radioactive release.

Senator LIEBERMAN. Right.

Mr. HOFFMAN. I think they would be attracted to a commercial nuclear powerplant because of the almost unparalleled opportunities for publicity and attention, and, as Mr. McGrath said earlier of the FBI, I think it's the perfect opportunity to foment fear and alarm in a community.

Also, with reference to the United Kingdom, that's very true that the IRA hasn't attacked British commercial powerplants; however, there has been a steady increase in the types of attacks they've undertaken that potentially involve deliberately killing more people. Just last month they attempted to blow up a natural gas plant, which would have caused a significant amount of death and damage in the surrounding area.

So I think that the threat overall is low, but it would be foolish to say at the same time that it's not increasing or it hasn't risen.

Senator LIEBERMAN. From your experience and inquiry, are you in a position to evaluate the effectiveness of some of the defensive measures that we've described here, particularly the road barriers or the strengthening of the fences around the perimeter of a plant?

Mr. HOFFMAN. In specific terms, no. In general terms, though, I think the message of Three Mile Island is that they're necessary.

Senator LIEBERMAN. Yes.

Mr. Colvin, I want to make sure I understood, because at one point I thought you said that the protections, as they exist now under NRC regulations, surrounding the powerplants are adequate, and then on another point I thought I heard you if not welcome, express interest in the review of whether there ought to be vehicular barriers at the points of entry. Are they both right?

Mr. COLVIN. Yes, sir. I believe, Mr. Chairman, they are both right. In fact, I do believe that the current requirements that we have in place, based upon the knowledge that we have, provide adequate measure of protection for public health and safety. At the same time, we certainly encourage the NRC review of the threat based upon new information or revisiting of old information.

I think that the issue we're really talking about in this arena and in setting any type of public policy or regulations is to look at the risk, and the risk is made up of two principal factors. One is the probability that the event will occur in the first place, which is what we've heard a lot about today and are discussing even currently. The other is, what are the consequences of that event should that event occur? The combination of those two factors equates to risk. So in our judgment, when we look at the low probability based upon the knowledge we have now of such an event, a threat to a nuclear powerplant as well as the consequences being also low, then we believe the total risk is low.

Certainly, the NRC has evaluated this in response to—some of their other activities, using probabilistic safety assessment technology to look at the relationships and locations of where this vital equipment is located to determine, in fact, if it would be damaged or impacted by some event, whether that be a sabotage event or whether that be some type of hurricane, tornado, or other natural occurring event. It was concluded that the risk level, looking at these events, in fact does not warrant that review based upon, at least, the current knowledge.

I think once we evaluate the event and see the results of the Incident Investigation Team at Three Mile Island and also the results of the World Trade Center, certainly we'll have much better knowledge at which to assess this total risk and provide whatever changes are necessary.

Senator LIEBERMAN. Okay. So your statement of the adequacy of the existing protection systems, in a sense, is pre-Three Mile Island and World Trade Center. In other words, you want to wait to see what the results of the inquiries are. Naturally, I was going to ask you how could you say they were adequate based on what you saw in the film, and I know what you know of the ability of this one individual to penetrate through, and I consider your format of consequences when we had the testimony of Chairman Selin that, in fact, if a bomb had been in the car, it would have run the risk of creating a radiological release and certainly substantial damage to the facility.

Mr. COLVIN. Yes, sir. If I could answer those in two parts, first and foremost, I think we have to continue, notwithstanding the event of Three Mile Island, to recognize that this was not a terrorist attack on Three Mile Island. In fact, that confirms, on one hand, the FBI's statements that in fact the nuclear plant is a low-probability target and has a very low probability of threat.

Senator LIEBERMAN. Yes, but I think we're saying aren't we lucky that it wasn't a terrorist attack, that it was—

Mr. COLVIN. Well, I think we are—going back to my statement of the total risk, even with a high probability, I think we have to look also at the consequences. I participated in the Sandia study in 1985 through 1986 and a comparison of that, and I would confirm Chairman Selin's assessment of the scope of the study as well as the results. I think that certainly had a bomb been in the station wagon at Three Mile Island, we would have had significant damage to the turbine building and significant damage to plant equipment in that area.

Senator LIEBERMAN. Yes.

Mr. COLVIN. But on the other hand, our initial evaluation does not conclude that damage would have challenged the safety systems in a way that would have increased the risk of public health and safety. I think, clearly, from an investment standpoint and from a business standpoint, the decisions that Mr. Clark has made that protect the plant and heighten the protection from an industrial safety perspective are certainly warranted, and they have made that decision. But that's a business decision as compared to a decision based upon protection of public health and safety, and I think it's important to keep those two in mind.

Senator LIEBERMAN. Can you indicate to us whether the state of security at Three Mile Island was, prior to this incident, comparable to that at most other nuclear powerplants in the country, less or more?

Mr. COLVIN. Mr. Chairman, I really don't have specific knowledge of that detail. I can say that I do know of facilities that have in place some of the measures that Mr. Clark is in fact putting in place at Three Mile Island, that they have made the determination from a personnel safety and employee safety standpoint to put those in place, and have done so.

I think that each plant, as Chairman Selin pointed out, is a unique configuration and, depending upon the road configuration, pathways, and natural occurring barriers, each plant is different, and people have certainly taken advantage of those site characteristics.

Maybe Mr. Clark can answer.

Senator LIEBERMAN. Mr. Clark, go ahead.

Mr. CLARK. Good. Mr. Chairman, NRC has a process where they periodically rate each nuclear powerplant in seven different areas, one of which is security.

Senator LIEBERMAN. Yes.

Mr. CLARK. They put you in category three, which says you meet the standards, but they're worried or—I'm not sure that's how they'd say it; two is you more than meet the standards; and one is you exceed the standards by a great bit. My own security program has consistently been rated one.

Senator LIEBERMAN. And yet the individual came bursting through.

Mr. CLARK. But I'd like to return to what Chairman Selin said and what Mr. Colvin has said. The purpose of security is to prevent radiological release to the public with regard to what could have happened if the man had explosives with him.

Senator LIEBERMAN. Right.

Mr. CLARK. He could have damaged equipment, but we believe the likelihood that he could have caused any harm to the radiological safety systems is low, and we believe that if he had caused harm to the safety systems, the likelihood that would result in damage to the core is lower still, and the likelihood that if the core were damaged that material would be released to the environment and the public is still lower.

Senator LIEBERMAN. Yes.

Mr. CLARK. So while you cannot say that a big enough bomb placed properly by somebody who would need knowledge of the plant—you need somebody who knows bombs and knows the plant—I cannot say that could never cause harm, but we think the likelihood is very, very low, and I think that's what Chairman Selin was saying. When you say could it, nobody can give you an absolute no answer, but I believe it's a very, very low probability.

Senator LIEBERMAN. Yes. Again, it's the worst-case scenario that I'm about to suggest, but it's based on this Hicks individual who was bombing IRS facilities and was constructing 2,000 pound bombs. And then put that along side the Sandia report, which suggests that a large explosion such as that would have been—even outside the perimeter of the facility could have done damage to the facility. It just says to me I'm glad they're doing a review of the security arrangements.

Mr. Colvin, I don't want to ask this in too pejorative a way, but let me just ask you straight ahead. I'm prepared to say that the risk here is low, and yet, to me, it exists. But, again, not constructing it, but just taking what we know has happened, this Hicks individual, the fact that this eco-extremist group in Arizona actually made an attempt on the perimeter of a nuclear facility, all that says to me is that there may be somebody who wants to damage a nuclear facility or World Trade Center, all of it together.



Why not take the extra steps, really, as Mr. Clark has now done? Why not have all the nuclear powerplants take the extra steps? Is it just a matter of cost? I don't say "just," because I know the rate payers are going to pay it, but is that the main obstacle here?

Mr. COLVIN. Well, I think that the main obstacle, Mr. Chairman, rests on what we believe provides reasonable assurance of public health and safety and what steps are necessary to do that. In fact, if the Nuclear Regulatory Commission believes that those steps would be a prudent expenditure of resources both in the initial installation as well as the ongoing requirements to levy that level of protection for public health and safety, then clearly that would be an easy decision.

I think that's the issue that we're talking about now, and even if this level of protection were put in, then the question arises, what about the next theoretical challenge to this protection system?

Senator LIEBERMAN. Yes.

Mr. COLVIN. For every protection system that I design, anyone can design a theoretical threat that could exceed that, so I think we need to go back to look at the issue of risk, as I'd indicated before, and bring to bear the various experiences and knowledge level that we have and make the appropriate decisions from a public policy standpoint.

Senator LIEBERMAN. Mr. Greenberg, do you want to get into this?

Mr. GREENBERG. Well, I suppose our assessment is a little bit different. Our assessment for almost 10 years has been that this threat existed. The Nuclear Control Institute had a task force that met in 1986 and 1987. We brought together experts from all around the world, not just the United States, but also from western Europe and Japan. That task force concluded that it was a real risk and that steps ought to be taken at nuclear powerplants against the truck bomb threat. That's really what stimulated the efforts of the Nuclear Control Institute in particular to begin pressing the NRC to adopt tougher security measures.

What's happened in the last couple of months, in our view, is that what we've always felt to be the case has been confirmed by the incidents at TMI and the World Trade Center. It's been confirmed that the truck bomb threat or the use of truck bombs for terrorist purposes is credible here in the United States, and that we are not going to have adequate advance warning to put contingency plans into effect that are going to thwart such a threat.

At the same time, we see that the costs of protecting against truck bombs, from our perspective—obviously, they're going to have to be borne by rate payers—are relatively low, low enough that a utility such as Mr. Clark's has already gone ahead on its own initiative to implement them. So we're not talking here about a set of protections which is so expensive as to cause severe problems for the utilities which would be implementing them.

Let me make one point about the TMI incident. It's my understanding, and I don't have all the facts and, obviously, have not seen the investigative report, but from what I at least read in the public literature, it appeared that there was a substantial amount of time which elapsed before the automobile which the individual drove was even searched by the authorities or the security personnel at the facility. If that's true, that suggests that it may not be as

suicidal as Chairman Selin stated for an individual to breach current security. An individual might indeed enter the protected area and approach vital areas, leave the vehicle, try to escape into the plant or elsewhere, and then have a bomb detonated.

Senator LIEBERMAN. Yes. Well, I've got sequences for the record, a sequence of events from the incident that says that the intruder drove through the north gate at 6:54 a.m., at 7:05 a.m. the security determined that the vehicle was unoccupied, and then at 9:20 a.m. a vehicle check was completed, finding no explosives, et cetera. So it was approximately two hours.

Mr. Clark, do you want to respond to that?

Mr. CLARK. I think the time line you gave is pretty close. The difference I see between the World Trade Center and TMI is the World Trade Center really didn't have any security or any ability to detect the fact that a bomb was there until it went off. We clearly have the ability, and the event demonstrated the ability, to detect the intrusion and to respond to it. The vehicle was not in a particularly dangerous spot, and we chose to have the Ordinance Department come in and help us with going after a potential weapon.

Senator LIEBERMAN. So part of the delay was that you waited for the ordinance experts to come in before you approached the car?

Mr. CLARK. Yes.

Senator LIEBERMAN. Do you think it was too long? It's two hours and 15 minutes between the determination that the vehicle was unoccupied and the conclusion that there were no explosives.

Mr. CLARK. One of the lessons that may come out of the investigations is that there are ways or should be ways to get at that part of it sooner, so I wouldn't rule that out as a conclusion. At the same time, we didn't feel it was particularly threatening to the safety systems or to a radiological release or anything except equipment damage, so in a sense that was not the priority. We were protecting the vital areas and the equipment, which, if damaged, could cause a radiological release, so I think our priorities were right. Whether, after studying this, we could shorten the time for investigating the vehicle, that certainly is a possibility.

Senator LIEBERMAN. Dr. Hoffman, do you have a response to that?

Mr. HOFFMAN. Well, in some respects, I think we're missing the point. I mean, the way the design basis threat reads, and I don't think I'm mistaken, is that to recognize the possible use of land vehicles for breaching the perimeter barriers and transporting adversary personnel and their equipment. It's not only if it's a bomb, it's whether a vehicle is going to crash into the site and the commandos are going to jump out. And TMI almost patently—I mean, it's an academic issue now that the design basis threat was not adequate, because a vehicle carried an intruder who happened not to be an adversary in a terrorist sense, but nonetheless penetrated the defenses and was at large for four hours, and the vehicle itself was left unattended for two and a half hours before it was cleared of any explosives in it.

Senator LIEBERMAN. Mr. Clark?

Mr. CLARK. I don't think the facts are in question, but the implication that a vehicle with several armed people in it would in fact



have compromised the plant and result in a radiological release, that's a big step. They couldn't do it from the turbine building. They have to get in the vital area with posted guards at the vital area. Once they're in there are redundant safety systems, and the crews are quite knowledgeable and go through drills on how to respond to events where you lose safety equipment. So I think even postulating that there were several armed people in that vehicle is still quite a ways away from having, in fact, radiological sabotage.

Senator LIEBERMAN. Mr. Colvin, doesn't that answer suggest that the NUMARC's petition to lessen the security at those doors on the theory that they only delay the external threat by 10 to 15 seconds seem off the mark here? In other words, that 10 to 15 seconds in the situation Mr. Clark describes really could be quite important in keeping the intruder of this kind outside of the vital areas of the facility.

Mr. COLVIN. Yes, sir. I'd like to explain that, because I think that the statement as you read and brought from our submittal has in fact been misunderstood, and I'd like to clarify that.

First of all, in the testing that the NRC has done against the design basis threat, they have given no credit for the protected area fence, which is the boundary that this vehicle penetrated. In fact, the teams that Chairman Selin mentioned, which are both the Regulatory Effectiveness Review—the RER teams and, following the sequence to those, the OSRE—and I apologize for not knowing exactly the details of that acronym, but the OSRE teams in fact start the test against an external threat along the lines of the design basis threat, given that the people are inside the protected area fence.

At that point, if you assume that you have a highly trained, highly equipped paramilitary force, much like a Navy SEAL team, or the equivalent, then that team is only given credit for those doors in the 10- to 15-second category even though those are four-inch thick, hardened doors, alarmed and electronically controlled.

Our petition to the NRC, in fact, is focused on taking the requirements for those doors, for their alarm and their response of those doors, out of the current security plan. Right now if a door goes into an alarm condition, and an alarm malfunctions, I'm required to put in compensatory measures in the form of a security guard at that door on a 24-hour-a-day basis and do that within 10 minutes.

What that does is take the focus of our security force away from the protection of the external threat and focuses it more on the insider and control the doors during a time when we don't have any known threat from outside the plant. So our whole focus of trying to look at that is really consistent with the approach that we've outlined to the Commission for reducing the requirements from the insider threat that is consistent with the new regulatory requirements that are put in place since the 1977 time frame.

I don't believe those are inconsistent. I think that our review of the security managers at each of the sites indicate that should the NRC remove those as a requirement from the security plan, each plant would maintain the ability to seal the vital areas of the plant and do so in the same way that Mr. Clark described earlier.

Senator LIEBERMAN. Mr. Greenberg, do you want to give a brief response to this December 21st petition of NUMARC to alter these arrangements?

Mr. GREENBERG. Well, I must say I reacted to that petition somewhat the way Chairman Selin did—that is, I don't think that we would categorically disagree with an assertion that in some areas there may need to be modifications of existing security requirements if those requirements are proven not to be effective. By the same token, there may be other areas in which there should be upgrades of security requirements. We have not evaluated in detail the specific proposals of NUMARC, so I really don't feel that I'm competent this morning to discuss them.

Senator LIEBERMAN. Mr. Clark, two final questions, briefly. To what extent was the ability of the Three Mile Island plant to shut down compromised by the intruder making it into the turbine building?

Mr. CLARK. It really wasn't compromised. The crew within the vital areas always had the capability to "scram" the plant—that is, to shut it down quickly.

Senator LIEBERMAN. Finally, are there any special security requirements around the casks where the spent nuclear fuel is stored on site?

Mr. CLARK. We do not, at TMI, have spent nuclear fuel stored in casks. The casks in the video contained the resin, a material used to clean up water streams. It was not fuel.

Senator LIEBERMAN. Okay.

I thank all of you for your testimony, which has completed the picture here. Again, to restate, this is the first hearing that this subcommittee has had in this session on nuclear issues. We have a broad range of concerns and interests in those issues, and my State of Connecticut gets—oh, I don't know—almost half of its electricity from nuclear power, I believe.

In fact, right after this we're going to do a press conference with Northeast Utilities in which they're contributing some of their acid rain credits under the Clean Air Act to charity, and part of the reason why they have the credits is that we've relied on nuclear power to that extent.

So it's in that spirit that we go forward, but I, in exercising my responsibility as Chairman of this subcommittee, felt putting the Three Mile Island incident and the recent intruder incident together with the World Trade Center merited a very serious review of security procedures against a terrorist attack or even against a more well-armed, deranged individual who doesn't fit the classic definition of terrorism, but nonetheless could do serious damage.

I appreciate your being here. I hope we all go forward in the spirit of cooperation, because we should have a common goal here. We're going to hold the record of the hearing open for two weeks if any of you or any of the witnesses or any member of the public wishes to file testimony to be part of the official record.

With that, I thank you, and the hearing is adjourned.

[Whereupon, at 12:27 p.m., the subcommittee adjourned, to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

**TESTIMONY BY**  
**HARRY B. BRANDOW, III, DEPUTY ASSISTANT DIRECTOR**  
**INTELLIGENCE DIVISION**  
**FEDERAL BUREAU OF INVESTIGATION**  
**BEFORE THE SUBCOMMITTEE ON CLEAN AIR AND NUCLEAR REGULATION**  
**OF THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS**  
**UNITED STATES SENATE**  
**MARCH 19, 1993**

GOOD MORNING MR. CHAIRMAN, DISTINGUISHED MEMBERS OF THE COMMITTEE. IN RESPONSE TO YOUR REQUEST, TODAY I WOULD LIKE TO DISCUSS THE FBI'S ANALYSIS OF THE CURRENT TERRORIST THREAT AND, MORE SPECIFICALLY, THE THREAT TO OUR NUCLEAR FACILITIES, TO THE EXTENT POSSIBLE WITHIN THIS OPEN HEARING. I WOULD ALSO LIKE TO PROVIDE YOU WITH INFORMATION ON THE FBI'S ROLE IN ADDRESSING NUCLEAR TERRORISM AND TO EXPLAIN THOSE PROGRAMS AND INITIATIVES DEVELOPED TO ADDRESS THIS NEED.

ON FEBRUARY 26, 1993, MANY AMERICANS STOOD RIVETED AS THE EVENTS REVEALED THAT AN EXPLOSIVE DEVICE HAD CAUSED SUBSTANTIAL DAMAGE TO THE WORLD TRADE CENTER. EVENTUALLY WE WOULD ALL BECOME AWARE THAT THIS CRIMINAL ACT RESULTED IN A TRAGIC LOSS OF LIFE AND HUNDREDS OF INJURIES TO INNOCENT PERSONS.

THERE HAS BEEN MUCH SPECULATION THAT THE BOMBING WAS THE WORK OF TERRORISTS. WHILE THE FBI IS CONDUCTING THE

INVESTIGATION AS A SUSPECTED TERRORIST ACT, I NEED TO STRESS THAT THE INVESTIGATION IS STILL ONGOING, AND MANY QUESTIONS REMAIN TO BE RESOLVED. MOREOVER, AS DIRECTOR SESSIONS HAS PREVIOUSLY TESTIFIED, WHATEVER THE MOTIVATION, THE FBI HAS NO REASON TO BELIEVE THAT IT IS A PRELUDE TO A WAVE OF TERRORISM IN THE UNITED STATES.

MR. CHAIRMAN, I THINK IT IS IMPORTANT TO PROVIDE SOME HISTORICAL PERSPECTIVE TO THIS TRAGIC INCIDENT.

AS YOU ARE AWARE, SINCE THE PERSIAN GULF CRISIS, THE TERRORIST THREAT LEVEL IN THE UNITED STATES HAS BEEN GENERALLY LOW. PERHAPS EVEN MORE SIGNIFICANT, BETWEEN 1982 AND 1992, TERRORIST INCIDENTS WITHIN THE UNITED STATES HAVE SHOWN A STEADY DECLINE. HOWEVER, THE WORLD TRADE CENTER BOMBING DOES REMIND US NOT TO BE COMPLACENT AND THAT WE MUST CONTINUALLY DEVELOP PLANS AND INITIATIVES TO GUARD AGAINST EXTRAORDINARY CRIMINAL OR TERRORIST ACTS.

HISTORICALLY, TURMOIL IN THE WORLD POLITICAL AND ECONOMIC ARENAS HAS HAD AN IMPACT ON THE TERRORIST THREAT, BOTH IN THE UNITED STATES AND ABROAD. WHILE THE UNITED STATES HAS NOT EXPERIENCED THE SAME LEVEL OF TERRORIST ACTIVITY DOMESTICALLY AS OTHER NATIONS, TERRORISM CONTINUES TO POSE A THREAT TO U.S. PERSONS AND PROPERTY AT HOME AND ABROAD. THIS IS DUE IN LARGE PART TO TERRORISM'S DEPENDENCY ON VIOLENCE AS A MEANS TO CONVEY ITS MESSAGE.

THE FBI IS THE LEAD FEDERAL AGENCY IN RESPONSE TO NUCLEAR TERRORISM DOMESTICALLY AND HAS SEVERAL ONGOING PROGRAMS THAT ARE DESIGNED TO MITIGATE THE THREAT OF NUCLEAR TERRORISM WITHIN THE UNITED STATES. THE FBI IN COORDINATION WITH THE DEPARTMENT OF ENERGY, DEPARTMENT OF DEFENSE, AND NUCLEAR REGULATORY COMMISSION, HAS DEVELOPED SPECIFIC CRISIS MANAGEMENT PROCEDURES AND PLANS TO RESPOND TO THREATS AGAINST OUR NUCLEAR FACILITIES. THIS COORDINATED EFFORT INCORPORATES THE DISSEMINATION OF PERTINENT THREAT INFORMATION WHERE APPROPRIATE, THE DEVELOPMENT OF RESPONSE CAPABILITIES THROUGH TRAINING AND RESEARCH, AND THE APPLICATION OF FBI AND OTHER U.S. GOVERNMENT RESOURCES NECESSARY TO COUNTER OR INTERDICT THE THREAT OF NUCLEAR TERRORISM.

THE FBI HAS DEVELOPED, THROUGHOUT ITS 56 FIELD OFFICES, POSITIVE AND PRODUCTIVE RELATIONSHIPS WITH ALL AGENCIES ASSOCIATED WITH NUCLEAR FACILITIES PROTECTION. THE FBI HAS CAPITALIZED ON THESE PROFESSIONAL RELATIONSHIPS THROUGH THE DEVELOPMENT OF INTERAGENCY CRISIS MANAGEMENT EXERCISES AND TRAINING SEMINARS IN CONJUNCTION WITH THE DEPARTMENT OF DEFENSE AND THE DEPARTMENT OF ENERGY.

IN CONJUNCTION WITH THE FBI'S RESPONSIBILITY IN COUNTERTERRORISM AND OUR SPECIFIC JURISDICTIONAL RESPONSIBILITIES CONCERNING ATOMIC ENERGY ACT MATTERS, THE FBI HAS SEVERAL FULL TIME PERSONNEL DETAILED TO THE DEPARTMENT OF ENERGY AND THE

DEPARTMENT OF DEFENSE. THESE FBI MANAGERS ARE A DIRECT LINK BETWEEN THE DEPARTMENT OF ENERGY'S OFFICE OF THREAT ASSESSMENT AND THE DEPARTMENT OF DEFENSE'S SPECIAL OPERATIONS/LOW INTENSITY CONFLICT COMMAND. INDIVIDUALLY THEY HELP COORDINATE THE FLOW OF NECESSARY INTELLIGENCE BETWEEN EACH OF THE AGENCIES, AND MAKE POSSIBLE THE TIMELY REFINEMENT OF PLANS AND PROCEDURES UTILIZED IN COMBATING TERRORISM.

THE FBI ACTIVELY PARTICIPATES WITH THE DEPARTMENT OF DEFENSE, THE DEPARTMENT OF ENERGY, AND NUCLEAR REGULATORY COMMISSION FACILITIES IN NUCLEAR-RELATED CRISIS MANAGEMENT EXERCISES. CURRENTLY, THE FBI IS INVOLVED IN A SERIES OF EXERCISES FOCUSED ON NUCLEAR CONTINGENCY RESPONSE PLANS. REPRESENTATIVES OF THE NUCLEAR REGULATORY COMMISSION WILL BE INVITED TO OBSERVE THESE EXERCISES AS PART OF THE FBI'S EFFORTS TO FAMILIARIZE THEM WITH THE FBI'S NUCLEAR CRISIS MANAGEMENT PROCEDURES AND PRACTICES. THESE EXERCISES CAN BE GENERALLY DESCRIBED AS FOLLOWS:

- A U.S. GOVERNMENT AGENCY HEADQUARTERS LEVEL TABLETOP EXERCISE DESIGNED TO IDENTIFY POLICY ISSUES AND PROVIDE RECOMMENDATIONS FOR RESOURCE ACQUISITION AND UTILIZATION,

- A UNIQUE COMMUNICATIONS EXERCISE DESIGNED TO TEST AND EVALUATE ALL FORMS OF CRISIS MANAGEMENT COMMUNICATION REQUIREMENTS ESSENTIAL TO THE SUCCESSFUL RESOLUTION OF A NUCLEAR CRISIS INCIDENT,

- AND A FULL FIELD TRAINING EXERCISE DESIGNED TO TEST AND EVALUATE THE ENTIRE NUCLEAR CRISIS RESPONSE PLAN. THIS WILL INCLUDE POLICY IMPLEMENTATION, COMMUNICATION CAPABILITY, INTERAGENCY COORDINATION, AND THE UTILIZATION OF OPERATIONAL RESOURCES AND TACTICS DESIGNED TO COUNTER A NUCLEAR THREAT.

CONTINUING CRISIS MANAGEMENT PREPARATION BETWEEN THE FBI AND THE NUCLEAR REGULATORY COMMISSION FACILITIES IS ESSENTIAL. WE FEEL THAT AN EXHAUSTIVE PLANNING AND EXERCISE PROGRAM IS THE KEYSTONE TO BEING PREPARED FOR THE NUCLEAR THREAT. THE FBI MANDATES THAT IN THOSE FIELD OFFICES HAVING A NUCLEAR REGULATORY COMMISSION FACILITY IN ITS TERRITORY THAT APPROPRIATE LIAISON, COORDINATION, AND TRAINING INITIATIVES BE IN PLACE TO ENSURE EFFECTIVE EMERGENCY RESPONSE BY LAW ENFORCEMENT. THE SUCCESSFUL COORDINATION OF ALL LAW ENFORCEMENT CAPABILITIES IN RESPONSE TO A SPECIFIC THREAT AGAINST A NUCLEAR FACILITY IS THE UNDERLYING GOAL OF THE FBI'S TRAINING AND EXERCISE INITIATIVES.

AS THE DESIGN EXPERTS OF THE NUCLEAR REGULATORY COMMISSION ADVISE US, NUCLEAR POWER PLANTS ARE BUILT TO WITHSTAND A NUMBER OF NATURAL DISASTERS, TO INCLUDE HURRICANES, EARTHQUAKES, TORNADOS, AND FIRES. IN ADDITION, NUCLEAR FACILITIES ARE EQUIPPED WITH A NUMBER OF CONCENTRIC AND TIERED SECURITY SYSTEMS, ALL OF WHICH WOULD BE DIFFICULT TO BREACH. SECURITY AT NUCLEAR FACILITIES IS DESIGNED BY EXPERTS TO COUNTER A WIDE VARIETY OF THREATS. THE FBI DOES NOT, AS MATTER OF

POLICY, CONDUCT A SECURITY EVALUATION OF IN-PLACE SECURITY SYSTEMS AT NUCLEAR REGULATORY COMMISSION FACILITIES. HOWEVER, AS A KEY COMPONENT TO THE OVERALL PHYSICAL SECURITY PLAN, THE FBI WORKS CLOSELY WITH THE NUCLEAR REGULATORY COMMISSION AND THE DEPARTMENT OF ENERGY TO ENSURE THAT ANY AND ALL THREAT INFORMATION PERTAINING TO NUCLEAR FACILITIES IS IMMEDIATELY DISSEMINATED TO THE APPROPRIATE RECIPIENTS. IN ADDITION, THE FBI TRAINS WITH SECURITY PERSONNEL AT THOSE FACILITIES TO ENSURE A RAPID LAW ENFORCEMENT RESPONSE SHOULD A TERRORIST GROUP ACTUALLY ATTACK A NUCLEAR FACILITY.

PERHAPS THE FBI'S MOST NOTABLE ENCOUNTER WITH A PLANNED ACT OF TERRORISM AGAINST A NUCLEAR FACILITY INVOLVED THE "EVAN MECHAN ECO-TERRORIST INTERNATIONAL CONSPIRACY" (EMETIC). EMETIC, A DOMESTIC TERRORIST GROUP, PLANNED THE DESTRUCTION OF POWER TRANSMISSION LINES LEADING TO SEVERAL NUCLEAR FACILITIES LOCATED IN THE SOUTHWESTERN UNITED STATES. EXTENSIVE INVESTIGATIVE EFFORTS BY THE FBI RESULTED IN THE MAY, 1989, ARREST OF GROUP MEMBERS ON CHARGES RELATING TO THE PLANNING OF THE DESTRUCTION OF THE TARGETED FACILITY. EMETIC WAS AN AVOWED OPPONENT OF NUCLEAR POWER, AND DESIRED ONLY TO DISABLE THE NUCLEAR FACILITIES, NOT TO EFFECT A DEADLY RELEASE OF RADIATION INTO THE ENVIRONMENT. THE FBI ARRESTS IN THIS MATTER SUCCESSFULLY THWARTED ADDITIONAL PLANS OF THIS GROUP TO COMMIT ACTS OF TERRORISM WITHIN THE UNITED STATES.



IN LIGHT OF THE WORLD TRADE CENTER BOMBING, THE COMMITTEE HAS POSED THE QUESTION AS TO THE POSSIBILITY OF A SIMILAR OCCURRENCE BEING PERPETRATED AT A NUCLEAR REGULATORY COMMISSION FACILITY. IT IS IMPORTANT TO NOTE THAT MANY OF THE CAPABILITIES AND SECURITY COUNTERMEASURES CURRENTLY APPLIED TO OUR NUCLEAR FACILITIES ARE NOT APPROPRIATE OR REALISTIC FOR USE IN PUBLIC ACCESS BUILDINGS OR COMPLEXES SUCH AS THE WORLD TRADE CENTER. THE EXISTENCE OF IN-PLACE PHYSICAL SECURITY SYSTEMS SIMILAR TO THOSE UTILIZED AT NUCLEAR REGULATORY COMMISSION FACILITIES WOULD IN THEMSELVES ACT AS A DETERRENT AGAINST SIMILAR ACTS OF TERRORISM. IT IS CONCEIVABLE THAT AN INDIVIDUAL WITH CRIMINAL INTENT COULD DRIVE A VEHICLE CARRYING SUBSTANTIAL AMOUNTS OF EXPLOSIVES INTO THE CONFINES OF A NUCLEAR REGULATORY COMMISSION FACILITY. HOWEVER, IT IS THE FBI'S ASSESSMENT THAT THE REQUIREMENTS FOR SUCH AN EVENT WOULD INCLUDE EXTENSIVE COORDINATION, SUBSTANTIAL MATERIAL ACQUISITION, AND ACCURATE INTELLIGENCE GATHERING - ACTIVITIES WHICH CAN BE SUSCEPTIBLE TO DETECTION BY THE FBI AND OTHER AGENCIES RESPONSIBLE FOR COUNTERTERRORISM.

MR. CHAIRMAN, IN CLOSING, LET ME STATE THAT THE FBI IS NOT IN RECEIPT OF ANY CREDIBLE INTELLIGENCE INDICATING THAT ANY DOMESTIC OR INTERNATIONAL TERRORIST GROUP IS INTERESTED IN SPECIFICALLY TARGETING NUCLEAR POWER PLANTS AND/OR NUCLEAR FUEL FACILITIES. WHILE THE POTENTIAL FOR A TERRORIST GROUP TO TARGET A NUCLEAR POWER STATION OR NUCLEAR FUEL FACILITY, HERE OR ABROAD,

REMAINS LOW, I WANT TO ASSURE YOU AND THE AMERICAN PEOPLE THAT THE FBI REMAINS COMMITTED TO A POLICY OF VIGILANCE AND COOPERATION - A POLICY WHICH I AM CONFIDENT MEANS THAT THE UNITED STATES WILL REMAIN AN EXTREMELY HOSTILE ENVIRONMENT FOR TERRORIST ACTIVITIES NOW AND IN THE FORESEEABLE FUTURE.

I WOULD BE PLEASED TO ANSWER ANY QUESTIONS YOU MAY HAVE.

STATEMENT SUBMITTED BY  
UNITED STATES NUCLEAR REGULATORY COMMISSION  
PRESENTED BY IVAN SELIN, CHAIRMAN

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE, WE ARE PLEASED TO APPEAR BEFORE YOU TODAY TO DISCUSS THE NUCLEAR REGULATORY COMMISSION'S PROGRAM FOR SAFEGUARDING NUCLEAR POWER PLANTS AND THE ACTIVITIES WE HAVE UNDERWAY TO REVIEW THE ADEQUACY OF THAT PROTECTION IN LIGHT OF RECENT DEVELOPMENTS. WE BELIEVE THAT OUR TESTIMONY ALSO RESPONDS TO YOUR RECENT LETTER TO THE COMMISSION ON THIS SUBJECT. AT THE OUTSET, WE WANT TO MAKE IT CLEAR THAT WE BELIEVE THAT CURRENT SAFEGUARD MEASURES IN PLACE AT NRC LICENSED POWER REACTORS CONTINUE TO PROVIDE REASONABLE ASSURANCE OF THE PUBLIC HEALTH AND SAFETY; THE QUESTION IS WILL THE PLANTS CONTINUE TO BE SAFE WITHOUT FURTHER PROTECTIVE MEASURES.

IT IS IRONIC THAT THE STAFF ALREADY HAD A REVIEW UNDERWAY, STARTING IN LATE 1991. THE REVIEW, HOWEVER, WAS PRIMARILY FOCUSED ON INTERNAL ACCESS MEASURES, AND NOT ON EXTERNAL ATTACKS SUCH AS TRUCK BOMBS. AS PART OF THIS REVIEW, THE STAFF WAS ASKED TO CONSIDER A PROPOSAL BY THE NUCLEAR MANAGEMENT AND RESOURCES COUNCIL (NUMARC) TO MODIFY THE DESIGN BASIS THREAT AND PLACE GREATER RELIANCE ON INTELLIGENCE INFORMATION. NUMARC ALSO QUESTIONED INTERNAL SECURITY REQUIREMENTS. IN A FEW MINUTES I'LL DISCUSS WHAT A DESIGN BASIS THREAT MEANS.

IN LIGHT OF THE RECENT UNAUTHORIZED VEHICLE ENTRY AT THE THREE MILE ISLAND NUCLEAR POWER STATION AND THE BOMBING AT THE WORLD TRADE CENTER IN NEW YORK CITY, WE ARE EXPANDING OUR REVIEW TO TAKE A FRESH LOOK AT THE QUESTION OF PROTECTING AGAINST UNAUTHORIZED VEHICLE ENTRY AND A VEHICLE BOMB. IT IS NOT OUT OF THE QUESTION THAT AT THE CONCLUSION OF OUR REVIEW, WE MIGHT, ON THE ONE HAND, DECIDE TO STRENGTHEN SOME MEASURES, WHILE AT THE SAME TIME, MODIFYING OR DELETING OTHER REQUIREMENTS WHICH HAVE PROVEN TO BE INEFFECTIVE.

#### GOAL

THE FIRST QUESTION TO ADDRESS IS OUR OBJECTIVE. THE OBJECTIVE OF OUR PHYSICAL PROTECTION REQUIREMENTS AT COMMERCIAL NUCLEAR POWER REACTORS IS TO PROTECT THE GENERAL PUBLIC FROM SABOTAGE-INDUCED RELEASES OF RADIOACTIVE MATERIAL OFF THE SITE. THE OBJECTIVE IS NOT THE DISCOURAGEMENT OF TERRORISM PER SE, NOR IS IT THE PROTECTION OF THE REST OF THE POWER PLANT. IT IS THE LICENSEES' RESPONSIBILITY TO DECIDE HOW MUCH ADDITIONAL PROTECTION THEY MAY WISH TO PROVIDE FOR THEIR FACILITY, EQUIPMENT, AND EMPLOYEES.

#### INTELLIGENCE AND ITS CONTRIBUTION

THE SECOND QUESTION IS "HOW MUCH SECURITY IS ENOUGH"? THIS IS NOT AN AREA WHERE ONE CAN SAY, "WHAT DOES THE INTELLIGENCE INDICATE?" AND THEN DETERMINE THE THREAT AGAINST WHICH WE PROTECT. INTELLIGENCE IN THIS AREA IS ONE PART HARD DATA AND SEVERAL PARTS JUDGMENT. WE DEFEND AGAINST A RATIONAL ADVERSARY - WE CANNOT ANTICIPATE THE ACTIONS OF A DERANGED PERSON WHO DOESN'T FOLLOW LOGIC. SHOULD WE REQUIRE IMPREGNABLE BARRIERS OR ONES THAT END UP BY REDIRECTING A WOULD-BE ADVERSARY TO A LESS WELL PROTECTED TARGET? ALL THESE CONSIDERATIONS ARE REFLECTED IN A DESIGN BASIS THREAT, IN OTHER WORDS, A SET OF POSTULATED THREATS AGAINST WHICH PLANT DEFENSES ARE DESIGNED, TAKING INTO ACCOUNT ACTUAL EVENTS; THE DETERRENCE PROVIDED BY THE SECURITY SYSTEM FROM A POTENTIAL ADVERSARY'S POINT OF VIEW; THE DIFFICULTY OF INSTALLING AND MAINTAINING A SECURITY SYSTEM; THE AVAILABILITY OF OTHER, PERHAPS MORE ATTRACTIVE TARGETS; AND INTELLIGENCE, WHEN IT IS AVAILABLE.

IT IS THE ABSENCE OF A KNOWN, CREDIBLE THREAT THAT FORCES US TO CREATE A DESIGN BASIS THREAT AGAINST WHICH TO PROTECT. HOWEVER, I WOULD LIKE TO STRESS THAT THE DESIGN BASIS THREAT IS A JUDGMENTAL SUBJECT ON WHICH PAST COMMISSIONS HAVE SPENT A GOOD DEAL OF EFFORT. CONCLUSIONS DRAWN ON THE VEHICLE BOMB THREAT HAVE NOT BEEN UNANIMOUS. I DON'T KNOW HOW THE CURRENT COMMISSION WILL DECIDE THE ISSUES UNDER RECONSIDERATION (WHICH INCLUDE VEHICLE BOMBS), BUT WE

WILL DEFINITELY GIVE THEM A FRESH AND OPEN-MINDED LOOK.

#### PAST ACTIVITIES

NRC'S POLICY REGARDING THE VEHICLE BOMB THREAT AND THE NEED FOR VEHICLE BARRICADES AT POWER REACTORS HAS BEEN REVIEWED ON SEVERAL PREVIOUS OCCASIONS. AFTER THE BOMBING OF THE MARINE BARRACKS IN BEIRUT IN 1983, THE NRC INITIATED EXTENSIVE, CLASSIFIED STUDIES WITH SANDIA NATIONAL LABORATORIES TO EVALUATE THE VULNERABILITY OF A NUCLEAR FACILITY TO A LARGE VEHICLE BOMB, AND TO IDENTIFY BARRIER TECHNOLOGIES THAT COULD BE USED TO PROTECT FACILITIES. THE COMMISSION CONCLUDED THAT SUCH PROTECTION WAS NOT NEEDED AT THAT TIME. THE COMMISSION PUT A LOT OF RELIANCE ON THE STURDINESS OF REACTOR BUILDINGS, ON REDUNDANT SAFETY SYSTEMS AND ON DAMAGE MITIGATION FEATURES OF POWER REACTORS, IN OTHER WORDS ON THE TRADITIONAL DEFENSE-IN-DEPTH PHILOSOPHY. THEY ALSO GAVE WEIGHT TO THE POTENTIAL DRASTIC NATURE OF THE CONSEQUENCES AND THE LIKELY POLITICAL BACKLASH THAT WOULD BE DIRECTED AGAINST THE CAUSES OF THE SABOTEUR. THEY CONSULTED WITH THE INTELLIGENCE COMMUNITY AND HEARD THAT THE COMMUNITY BELIEVED THAT THERE WAS NO CREDIBLE THREAT OF TERRORISM AGAINST NUCLEAR POWER PLANTS. TO ENSURE THE BEST THREAT ASSESSMENT, NRC ALSO REQUESTED THE VIEWS OF THE NATIONAL SECURITY COUNCIL. IN TURN, THE NATIONAL SECURITY COUNCIL REQUESTED INPUT FROM THE DEPARTMENTS OF DEFENSE AND ENERGY AS WELL AS THE FEDERAL BUREAU OF INVESTIGATION.

REALIZING THE EVANESCENT NATURE OF THE CONCLUSIONS AND THE SPEED WITH WHICH CIRCUMSTANCES MIGHT CHANGE, THE COMMISSION DID REQUIRE POWER REACTOR LICENSEES TO DEVELOP CONTINGENCY PLANNING TO PROVIDE SHORT-TERM PROTECTION AGAINST VEHICLE BOMBS; THE AGENCY VERIFIED THESE PLANS VIA INSPECTIONS IN 1989, 1990, AND AGAIN RECENTLY.

#### CURRENT ACTIVITIES

WHAT ARE WE DOING NOW? AS INDICATED EARLIER, THE COMMISSION BELIEVES THAT IT IS AN APPROPRIATE TIME TO REEVALUATE THE DESIGN BASIS THREAT FOR RADIOLOGICAL SABOTAGE. THE PRESENT THREAT STATEMENT DOES NOT ADDRESS THE USE OF A VEHICLE NOR THE USE OF A VEHICLE BOMB AGAINST A POWER REACTOR.

ONE STEP WE HAVE JUST TAKEN WAS TO HAVE LICENSEES REVIEW THEIR VEHICLE BOMB CONTINGENCY PLANS IN COORDINATION WITH THE NRC RESIDENT INSPECTORS. GENERALLY, SUCH CONTINGENCY PLANS CALL FOR SUCH ACTIONS AS RETURNING TO SERVICE ANY EQUIPMENT, TEMPORARILY TAKEN OUT OF SERVICE, WHICH WOULD BE USED TO ESTABLISH AND MAINTAIN A SAFE SHUTDOWN CONDITION. A NUMBER OF LICENSEES INSTALLED PERMANENT VEHICULAR BARRIERS SEVERAL YEARS AGO. MANY LICENSEES PLAN TO USE HEAVY EQUIPMENT, VEHICLES, OR CONCRETE BARRIERS, DIG DITCHES, OR EMLACE LARGE MOUNDS OF GRAVEL AS TEMPORARY BARRIERS. MANY OF THESE SHORT-TERM MEASURES, HOWEVER, COULD NOT BE REALISTICALLY UNDERTAKEN ON A LONG-TERM OR PERMANENT BASIS. THEY MAY DISRUPT IMPORTANT PLANT MAINTENANCE ACTIVITIES, THEY IMPOSE ADDITIONAL BURDENS ON EMPLOYEES SEEKING ACCESS, AND THEY ULTIMATELY DIMINISH OVERALL OPERATIONAL EFFICIENCY. IF PERMANENT MEANS ARE REQUIRED, A DIFFERENT APPROACH MIGHT BE NECESSARY.

WHERE DO WE GO FROM HERE? THE COMMISSION IS REEVALUATING THE VULNERABILITY OF A NUCLEAR POWER REACTOR TO UNAUTHORIZED VEHICLE ENTRY AND VEHICLE BOMBS, REFLECTING CURRENT FACILITY CONFIGURATIONS AND TECHNOLOGY ADVANCEMENTS. SINCE THE ORIGINAL STUDIES WERE COMPLETED BY SANDIA, THE CONCEPT OF STORING IRRADIATED SPENT FUEL IN INDEPENDENT SPENT FUEL STORAGE FACILITIES HAS MATURED. THE POTENTIAL VULNERABILITY OF THESE FACILITIES AND OTHER EXTERNAL SAFETY SYSTEMS WILL ALSO BE STUDIED.

A RANGE OF PROTECTION OPTIONS AND ASSOCIATED COSTS WILL BE EVALUATED, TO INCLUDE SUCH CONSIDERATIONS AS VEHICLE BARRICADES AT THE PROTECTED AREA PERIMETER, AND ANALYSIS OF SITE-SPECIFIC STAND-OFF DISTANCES TO COMPENSATE FOR THE EFFECT OF A BLAST. FOR SOME POWER REACTORS, VEHICLE BARRICADES COULD EASILY BE IMPLEMENTED, WHILE OTHER FACILITIES, BECAUSE OF SITING OR SIZE, MIGHT HAVE CONSIDERABLE DIFFICULTY UNDERTAKING SUCH MEASURES.

THE NRC STAFF HAS FORMULATED A WORK PLAN AND HAS MADE IT AVAILABLE TO THE GENERAL PUBLIC. THE ACTION PLAN IS COMPOSED OF TWO PHASES. PHASE I WILL CONSIST OF A RECONNAISSANCE -- A BRINGING UP-TO-DATE OF EARLIER WORK AND A REVIEW OF RECENT DEVELOPMENTS. THESE FINDINGS WILL BE PRESENTED TO THE COMMISSION NEXT MONTH; WE EXPECT TO BE ABLE TO MAKE AN INITIAL DETERMINATION OF DEPTH AND DIRECTION FOR NEXT STEPS. THE SECOND PHASE, LASTING UP TO SIX MONTHS, WOULD ENTAIL A MORE PROFOUND REVIEW AND ANALYSIS OF THE CHANGES IN THE NUCLEAR POWER REACTOR INDUSTRY, THE USE OF A VEHICLE, AND THE DESIGN BASIS THREAT FOR RADIOLOGICAL SABOTAGE.

WE WANT THIS PROCESS TO INCLUDE PARTICIPATION BY THE PUBLIC TO THE GREATEST EXTENT POSSIBLE, REALIZING THAT CERTAIN INTELLIGENCE AND VULNERABILITY INFORMATION MUST REMAIN CLASSIFIED. THE STAFF WILL CONDUCT A WORKSHOP TO SOLICIT IDEAS, VIEWS AND JUDGMENTS ON VARIOUS APPROACHES AND TECHNIQUES THAT CAN BE FACTORED INTO OUR FORMAL REVIEW. AFTER THE STAFF HAS COMPLETED ITS ANALYSIS AND DEVELOPED PROPOSED OPTIONS, WE PLAN TO PRESENT THEM TO THE PUBLIC DURING A COMMISSION MEETING, REPORT TO OUR CONGRESSIONAL OVERSIGHT COMMITTEES, AND THEN PUBLISH OUR CONCLUSIONS IN THE FEDERAL REGISTER.

MR. CHAIRMAN, IN YOUR LETTER OF FEBRUARY 22, 1993, YOU POSED A QUESTION DEALING WITH THE DECISION BY GPU NUCLEAR CORPORATION TO CONTINUE OPERATION OF THE THREE MILE ISLAND NUCLEAR STATION DURING THE FEBRUARY 7, 1993 EVENT. THAT DECISION IS BEING EVALUATED BY AN NRC INCIDENT INVESTIGATION TEAM (IIT) WHICH IS CONDUCTING A REVIEW OF THE CIRCUMSTANCES OF THE EVENT. WHILE THERE ARE ARGUMENTS ON BOTH SIDES, EVEN WITH THE BENEFIT OF OVER FIVE WEEKS OF HINDSIGHT, WE HAVE FOUND NO REASON TO QUESTION THE OPERATORS' DECISION TO CONTINUE OPERATION OF THE PLANT. THE IIT REPORT WILL BE SUBMITTED TO THE COMMISSION NEXT MONTH. WE WILL BE PLEASED TO PROVIDE YOU A COPY OF THE REPORT WHEN IT IS AVAILABLE.

#### SUMMARY

IN SUMMARY, WE PROMISE AN OPEN-MINDED, FRESH REVIEW OF THE DESIGN BASIS THREAT FOR RADIOLOGICAL SABOTAGE IN ORDER TO REEVALUATE THE ABILITY OF NUCLEAR POWER PLANTS TO ACHIEVE OUR OBJECTIVE OF PROTECTING THE PUBLIC HEALTH AND SAFETY. WE PLAN TO DO THIS WITH AS MUCH PUBLIC PARTICIPATION AND SCRUTINY AS POSSIBLE, GIVEN SECURITY REQUIREMENTS, AND IN A PRUDENT BUT TIMELY MANNER.

MR. CHAIRMAN, THIS CONCLUDES OUR STATEMENT. WE WOULD BE PLEASED TO ANSWER ANY QUESTIONS THAT YOU AND THE SUBCOMMITTEE MAY HAVE.

TESTIMONY OF ELDON V.C. GREENBERG  
on behalf of the  
NUCLEAR CONTROL INSTITUTE  
and the  
COMMITTEE TO BRIDGE THE GAP  
on  
THE ADEQUACY OF NUCLEAR POWER PLANT SECURITY  
TO PROTECT AGAINST TERRORISM AND SABOTAGE

Good morning. My name is Eldon V.C. Greenberg. I am a partner in the Washington, D.C. office of the law firm of Garvey, Schubert & Barer.<sup>1</sup> I am pleased to appear before you today to present the views of the Nuclear Control Institute ("NCI")<sup>2</sup> and the Committee to Bridge the Gap ("CBG")<sup>3</sup> concerning the adequacy of nuclear power plant security to protect against terrorism and sabotage. NCI and CBG believe there are numerous deficiencies in plant security. However, my focus today will be on the truck bomb threat and the initiatives needed to upgrade current levels of protection against such a threat.

Our basic position, as I will explain later in my statement, is that (1) current security regulations at nuclear power plants are inadequate to protect against truck bombs, which are not included in the design basis threat (10 CFR § 73.1); (2) one cannot rely on advance warning to provide the necessary lead time to respond to this threat; and, therefore, (3) the Nuclear Regulatory Commission (the "NRC") must mandate permanent measures to upgrade security at licensed facilities.

The Nuclear Control Institute is an independent, non-profit, policy research center that was established in 1981 to monitor nuclear programs in the United States and other countries. It develops strategies for preventing the spread and reversing the growth of nuclear armaments. In 1985, NCI co-sponsored a multidisciplinary, internationally attended conference on nuclear terrorism and thereafter created an International Task Force on Prevention of Nuclear Terrorism, comprised of 26 experts from nine countries. These initiatives resulted in two books: Nuclear Terrorism: Defining the Threat (Leventhal and Alexander, eds., Pergamon, 1986) and Preventing Nuclear Terrorism (Leventhal and Alexander, eds., Lexington, 1987). Among other matters, the 150 participants in the conference and the 26 Task Force members identified deficiencies and urged improvement in protection against sabotage at reactors and other nuclear facilities.<sup>4</sup> Since completion of its Task Force's work, NCI

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<sup>2</sup> 1000 Connecticut Avenue, N.W., Suite 704, Washington, D.C. 20036; (202) 822-8444.

<sup>3</sup> 1637 Butler Avenue, Suite 203, Los Angeles, California 90025; (310) 478-0829.

<sup>4</sup> See "The Truck Bomb and Insider Threats to Nuclear Facilities" by CBG President Daniel Hirsch in Preventing Nuclear Terrorism at 207-222.

has been actively seeking to have the NRC adopt appropriate upgrades in security measures at domestic nuclear power plants.

The Committee to Bridge the Gap is a non-profit organization engaged in public policy advocacy and research, and is particularly concerned with nuclear safety and nuclear terrorism. As an intervenor in an NRC proceeding (Docket No. 50-142), CBG successfully challenged the relicensing of one reactor based, in part, on weaknesses in site security.

For nearly a decade, NCI and CBG have pressed the NRC to upgrade its regulations regarding the "design basis threat," the maximum security challenge that the NRC requires nuclear facilities to be designed to withstand. The current design basis threat contemplates no more than three external attackers, on foot, acting as a single team and employing no more than hand-held weapons. It thus does not require protection against vehicle bombs. Furthermore, the design basis threat has not been changed since the 1970s, despite a dramatic increase in terrorism.

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My testimony this morning will be divided into three parts. First, I will touch briefly on the ten-year-long controversy that has surrounded the subject of the truck bomb threat to nuclear power plants. Second, I will discuss the implications of the recent intrusion at Three Mile Island-1 and the explosion at the World Trade Center. Third, I will present our view as to what the NRC must now do to correct the current shortcomings in its regulatory regime.

#### (1) Controversy Over the Truck Bomb Threat

Five years ago, Congressman Gejdenson's House Interior subcommittee held a hearing on the very subject before us today.<sup>5</sup> NCI and CBG testified at that hearing on the potentially catastrophic inadequacy of security systems at NRC-licensed nuclear reactors.<sup>6</sup> They pointed particularly to a study undertaken by Sandia National Laboratories, requested by the NRC, which concluded that domestic nuclear facilities

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<sup>5</sup> Threat of Sabotage and Nuclear Terrorism to Commercial Nuclear Powerplants, Oversight Hearing Before the Subcommittee on General Oversight and Investigations of the House Committee on Interior and Insular Affairs, 100th Congress, 2d Sess. (March 9, 1988) (hereinafter "Oversight Hearing").

<sup>6</sup> Previously, CBG and NCI had made efforts to persuade the NRC and other agencies of the U.S. Government to take the terrorism threat seriously and upgrade security at nuclear powerplants accordingly. In 1985, CBG testified to this effect before the NRC's Advisory Committee on Reactor Safeguards (Attachment A). Similar views were expressed in Hirsch et al., "Protecting Reactors from Terrorists," Bulletin of the Atomic Scientists, March 1986 at 22 (Attachment B). In October 1987 NCI, prompted by an Iranian threat to reactors in the United States broadcast over Radio Teheran, sent letters to the NRC and the National Security Council urging that both emergency and permanent measures be taken to protect licensed reactors against vehicular attacks. See Oversight Hearing at 98-106. In both cases, these efforts produced no results.

were vulnerable to truck bomb attack, and the inexplicable determination of the NRC, after its staff initiated an effort to upgrade the design basis threat to include truck bombs, to scuttle this effort and not to pursue appropriate corrective measures.<sup>7</sup> In light of congressional interest, the time seemed ripe for much needed change.

Unfortunately, the 1988 public airing of deficiencies in power plant security was not sufficient to stimulate change in the NRC's design basis threat regulations. Instead, on April 28, 1989, the Commission merely issued a "Generic Letter" (No. 89-07) which calls for licensees to develop "contingency plans" which could be implemented if advance warning of a truck bomb were received. The NRC has not sought even to measure the effectiveness of the plans developed.

In January 1991, with hostilities in the Persian Gulf imminent, NCI and CBG once again appealed to the NRC---this time by submitting a formal Petition for Rulemaking to the NRC seeking an upgrade of the design basis threat for radiological sabotage of nuclear reactors (PRM-73-9) (Attachment C).<sup>8</sup> NCI and CBG asked, among other things, for a revision of the threat assessment to include explosives-laden surface vehicles (truck and boat bombs). While the Petition was noted for public comment, see 56 Fed. Reg. 3228 (January 29, 1991) (Attachment E), it was ultimately denied by the NRC in June of 1991. See 56 Fed. Reg. 26782 (June 11, 1991) (Attachment F).

Continuing to believe that some meaningful action was needed, NCI and CBG subsequently filed in September 1991 a Request for Action under 10 CFR § 2.206 seeking an Individual Plant Examination ("IPE") program under which nuclear power plant licensees would evaluate their plants' ability to withstand safeguards events beyond the design basis (Attachment G). Although the NRC has established an IPE program for severe accidents, including an Individual Plant Examination for External Events ("IPEEE"), that program does not include the possibility of sabotage in its assessment. On December 31, 1991, the IPE request also was denied (DD-91-08) (Attachment H). See 57 Fed. Reg. 723 (January 8, 1992) (Attachment I).

## (2) Recent Events: Three Mile Island and the World Trade Center

The NRC's rejection of NCI's and CBG's initiatives rested on two pillars: (1) a belief that there was no credible threat of truck-bomb attacks in the United States, and (2) a belief that, if such a threat became credible, advance warning from intelligence agencies would provide ample time to upgrade security.

In a span of less than three weeks, both those pillars have been demolished. On February 7, a recently released mental patient drove his car through the main gate

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<sup>7</sup> See correspondence between Robert F. Burnett (Director, Division of Safeguards, NMSS) and George W. McCorkle (Chief, Power Reactor SG Licensing Branch, Division of Safeguards, NMSS), January 27, 1984 and April 26, 1984, reprinted in Oversight Hearing at 190, 192.

<sup>8</sup> NCI and CBG simultaneously sought to have the NRC take immediate action to ensure that contingency plans were fully and promptly implemented. This request was denied by the NRC on January 15, 1991 (DD-91-1) (Attachment D).



of the operating Three Mile Island-1 facility during a shift change, crashed through two security fences, breached the door of the turbine building, and then hid inside the plant for four hours before being apprehended. The event, in our judgment, demonstrated several things. First, an intruder, acting alone and apparently without a well thought-out plan, could penetrate a reactor facility and bring his vehicle within the "close distances" required to inflict "unacceptable damage" with a "relatively small charge," to use the terms of the Sandia study, cited above. Second, there might be no advance warning of such an event. Third, substantial time might elapse before it could even be determined whether explosives were being carried in a vehicle that breached security barriers.

In short, the TMI incident demonstrated the substantial weaknesses of current protections. It led NCI and CBG immediately to write to NRC Chairman Selin on February 19, 1993, urging the NRC to reconsider its rulings on our two prior submissions (Attachment J).

Then, on February 26, a truck bomb exploded in the garage of the World Trade Center. This event has a significance far beyond the personal tragedies and economic loss it produced. There can now be no argument over whether a truck bomb attack in the United States is credible---whether it be an attack against nuclear or other facilities. Furthermore, the World Trade Center event discredits the notion that authorities always will have sufficient advance warning of such attacks. It now appears that the perpetrators belonged to a group that may have links to known terrorist activities. If such individuals were not being monitored by U.S. intelligence and law enforcement agencies closely enough to provide advance warning of a major attack, we cannot have confidence that nuclear power plants will receive the advance warning needed to implement their "contingency plans."

The NRC's response to these events has been surprisingly hesitant. Initially, the NRC did not even instruct its licensees to review their short-term truck-bomb contingency plans, let alone implement them. Indeed, on February 28, two days after the surprise attack on the World Trade Center, a senior NRC safeguards official responded to an inquiry by NCI and CBG by saying, "We just don't see the threat. We don't see the justification for escalation [of security measures]."<sup>9</sup>

However, on March 1, the NRC, to its credit, began to realize that a serious review of plant security was required. It sent a directive to its Executive Director stating: "In light of the recent intrusion at the Three Mile Island and the apparent bomb event in New York City, the Commission believes it is an appropriate time for the NRC to reevaluate and, if necessary, update the design basis threat for vehicle intrusion and the use of vehicular bombs" (Attachment L). At the same time, the NRC released a statement that it was directing nuclear power plant operators to "review their truck bomb contingency plan in coordination with the NRC inspectors in the event that the NRC decides to require implementation of the plan" (Attachment M).

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<sup>9</sup> NCI-CBG press release, March 1, 1993 (Attachment K).

NCI and CBG are encouraged by these actions. We are concerned, however, that the NRC chose merely to review rather than activate the truck bomb contingency plans, and that the proposed timetable for reevaluating the design basis threat is so long that it raises questions as to whether the NRC's security rules will in fact ever be upgraded.

### (3) What Needs to Be Done

Our overall assessment of the NRC's response so far is that it is promising, but it can and should be made stronger. Vigorous oversight from Congress and the public will be required to ensure that the process stays on track and expeditiously produces a real improvement in protection against the threat of radiological sabotage. Following a meeting of NCI representatives with Chairman Selin, NCI sent a letter to the Chairman on March 5, 1993, outlining what it believes would be an appropriate course of action (Attachment N).

In order to minimize the vulnerability of licensed reactors to unforeseen intrusions like the one at TMI and to surprise attacks like the one at the World Trade Center, we recommend that the NRC proceed with a two-stage plan.

First, the design basis threat for radiological sabotage should be amended within 60 days to include the use of a vehicle. This change would then allow the highest priority to be placed on ordering prompt installation of permanent barriers and perimeter denial systems---a measure that is both feasible and relatively inexpensive. Indeed, in 1986, the NRC estimated that a vehicle denial system for roadway access would cost only about \$100,000 - \$200,000 per facility to install and \$10,000-\$20,000 annually to maintain, while a perimeter access denial system would cost only \$500,000-\$1,000,000 per facility to install and \$25,000-\$50,000 annually to maintain. SECY-86-101, Enclosure 2, reprinted in Oversight Hearing at 209-210. The protection gained seems well worth the modest price. If the NRC fails to complete the first stage within 60 days, causing a delay in installation of the protective barrier and denial systems, we recommend that the NRC immediately consider activation of the contingency plans each reactor facility has prepared for temporary protection against vehicle attacks.

The second stage, which should be completed within 120 days thereafter, should consist of an extensive review of what additional elements of the design basis threat regulations need to be upgraded. As indicated earlier, these regulations are seriously in need of change. For example, protection against more than three external attackers or against attackers acting as more than one team is not required. A thorough review of the TMI intrusion, in which a search for the intruder and protection of the backup diesel generators did not commence for two hours, should result in other recommendations for improved security requirements. Furthermore, it is far from clear whether sufficient margin is provided in the "defense in depth" of reactor and auxiliary systems to withstand, for example, a blast equivalent to the bomb at the World Trade Center.

In addition, the NRC should (1) expand the current IPEEE program to include consideration of sabotage, and (2) incorporate the expanded IPEEE in the reevaluation of the design basis threat Chairman Selin ordered on March 1. I would like to

emphasize that the need for an IPEEE program for sabotage is not eliminated by an upgrade of the design basis threat; the former is an essential complement to the latter to minimize damage to, and radioactive releases from, a nuclear power plant in the event of a successful attack.

Regrettably, it does not appear that the NRC is proceeding as vigorously as it might. The March 1 directive did not call for immediate action to upgrade the design basis threat, but rather for yet another reevaluation. Moreover, the protracted timetable---at least a year---described in the March 11 staff plan (Attachment O) may lead yet again to delay and, ultimately, inaction.

NCI and CBG believe that, in the wake of the intrusion at TMI-1 and the explosion at the World Trade Center, inaction is simply unacceptable. We believe the problem is both grave and clear, and the remedy straightforward and inexpensive. It is essential, therefore, that the NRC at long last modify its design basis threat to include truck bombs and other forms of vehicular attack and ensure that real, permanent, physical protections against such weapons are in place at domestic power plants as soon as possible.

That concludes my prepared statement. Thank you again for the opportunity to appear before you this morning. I would be most happy to answer any questions that you might have.

[NOTE: The attachments referred to throughout this statement have been retained in committee files.]

STATEMENT OF  
JOE F. COLVIN  
PRESIDENT AND CHIEF EXECUTIVE OFFICER  
NUCLEAR MANAGEMENT AND RESOURCES COUNCIL

Mr. Chairman and Members of the Subcommittee

My name is Joe Colvin. I am the President and Chief Executive Officer for the Nuclear Management and Resources Council (NUMARC). NUMARC is the organization of the nuclear power industry that is responsible for coordinating the combined efforts of all utilities licensed by the NRC to construct or operate nuclear power plants in all matters involving generic regulatory policy issues and on the regulatory aspects of generic operational and technical issues affecting the nuclear power industry. Every utility responsible for constructing or operating a commercial nuclear power plant in the United States is a member of NUMARC. In addition, NUMARC's members include major architect-engineering firms and all of the major nuclear steam supply system vendors.

Thank you for the opportunity to provide industry's perspective on nuclear power plant security and to describe the measures available to protect public health and safety. My remarks today will focus on the following points:

1. Current nuclear plant security arrangements provide adequate protection for public health and safety.
2. None of the changes to NRC regulations that the industry has proposed would increase the risk to public health and safety. Experience over the last 16 years has shown that some requirements are now only marginally effective in current security programs. At the same time these outdated regulations consume both NRC and industry resources that could be better spent on areas more important to public health and safety.
3. The "design basis threat" that was formulated in 1977 as the basis for current security requirements should be reassessed for two reasons:
  - the assumptions about the "insider" threat have become outdated because of other NRC regulations and industry programs that have been implemented since that date; and
  - the assumptions about the "external" threat are not supported by experience. Based on briefings received, no credible threat against commercial nuclear power plants has been identified.

4. The circumstances of the recent TMI and World Trade Center incidents are consistent with Federal agency assumptions about credible threats to nuclear plant security and potential public targets.
5. No credible analysis of these two events has yet been completed that suggests an increased risk to public health and safety from vehicular intrusion into nuclear plant protected areas.

### Defense-in-Depth

As you know, electricity generated from our commercial nuclear power plants is an important contributor to the fuel mix and energy security of our country. It contributes approximately 20% of the electricity generated. Our industry has demonstrated our commitment to maintain a high level of safety while providing a reliable source of electric power.

A safety culture has been molded into all aspects of the nuclear industry's programs from design to operation since the inception of commercial nuclear power. As part of this culture we have ascribed to the "defense-in-depth" philosophy, relying not on one, but a multitude of ways to provide reasonable assurance that public health and safety is protected. First and foremost among these is to prevent any damage to the nuclear fuel, thus precluding any release of radioactivity as a result of the event. This is achieved through multiple physical barriers between the fuel and the public (e.g., the fuel pellet, the fuel rods, the reactor vessel and the containment structure), redundant and diverse ways to provide water to the fuel to keep it cool, and extensive training of our operators to be able to handle off-normal situations. Our operators are trained on plant specific simulators at each of our facilities. Further, they undergo extensive training and are required to pass an NRC-administered requalification program every six years. In addition to these measures, extensive emergency operating procedures have been developed and tested to assist operator decision making in off-normal events.

Secondly, programs are established to mitigate an event should one occur. Here again, additional equipment designed to mitigate the event (e.g. containment sprays, hydrogen recombiners, public alert and notification systems), detailed emergency operating procedures, and extensive training of our operators to respond to the situation, as well as detailed emergency plans, have been put in place for situations requiring off site action. These detailed emergency plans involve not only the utility but also Federal, State and local agencies. They are tested, in full, at least once every two years. This gives you a brief overview of the philosophy within our industry of the defense-in-depth concept. It is not new, but it is one that we ascribe to diligently.

### Security

The reason I have gone through this overview of our safety philosophy is to help you to place the physical security programs at our power plants into perspective relative to the multifaceted approach we have to address public health and safety. Security is a very important element of that approach. The industry has spent considerable resources to provide

adequate security programs consisting of hardware, detection and mitigation systems, and properly staffed and trained security forces at our commercial nuclear power plants.

I will first explain the terminology used to describe the areas around the nuclear power plant. Imagine three concentric circles. Proceeding inward from the outer circle we have:

- (1) owner-controlled area;
- (2) protected area; and
- (3) one or more vital area.

The outer circle is the boundary of utility company (owner-controlled) property. Within the owner-controlled area is the protected area. This area is surrounded by a chain link fence topped with barbed wire and fitted with redundant monitoring capability to detect intrusion into that area. I want to emphasize that the purpose of the protected area fence is to detect attempted intrusion, not repel it. Within the protected area are one or more vital areas. The vital areas contain the key safety systems that facilitate safe shutdown of the plant and prevent or mitigate radiological releases in the event of an accident. The vital areas are generally protected by reinforced concrete walls. Doors to vital areas are locked and alarmed.

The design basis threat used to develop plant security programs is defined in 10 CFR 73.1(a) as:

*"A determined violent external assault, attack by stealth, or deceptive actions, of several persons with the following attributes, assistance and equipment:*

- *Well-trained (including military training and skills) and dedicated individuals,*
- *inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both,*
- *suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having effective long range accuracy,*
- *hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system, and*

*An internal threat of an insider, including an employee (in any position)."*

The external threat is essentially a highly trained paramilitary force.

Security measures established to protect against the design basis threat include:

- Physical protection barriers and illuminated isolation zones;
- Well-trained and well-equipped guards;
- Surveillance and patrols of the perimeter fence;
- Intrusion detection aids (e.g., closed-circuit television) and alarm devices;
- Bullet-resisting barriers to critical areas;
- Written procedures to execute safeguards contingency plans for dealing with threats; and
- A tactical reaction force.

Security around commercial nuclear power plants consists of access control, intrusion detection, threat assessment and tactical response. Access to the protected area is controlled by fence and security entrances continuously manned by security personnel. At these entrances, individuals are required to go through a metal and explosives detector before being allowed entry. Badges for those with unescorted access are located here as well. All vehicles are searched prior to being allowed entry into the protected areas.

Intruders are detected by use of closed circuit cameras and specialized sensors (e.g., electromagnetic fields that detect motion, and fence monitors). The protected area is well-lighted. This equipment is periodically tested to assure its satisfactory operation. There is a central alarm station and a backup alarm station, both of which are continuously manned. There are both visible and audible signals to alert the security force of an intrusion into the protected area.

Once an intruder is detected, the security force conducts an assessment of the situation. Based on what has occurred and the status of the plant at that time, they determine the appropriate steps to be taken to prevent radiological sabotage. All licensees are required to have written procedures to execute safeguards contingency plans to deal with the design basis threat.

The immediate response by a licensee to an intrusion is provided by a well-trained, well-equipped security force, trained to engage and impede adversary forces until additional law enforcement forces arrive. These individuals go through extensive training and are periodically evaluated by the licensee and the NRC.

Furthermore, the NRC staff, in concert with the Federal Bureau of Investigation (FBI) and other federal agencies, continually monitors both domestic and world events for potential

threats associated with commercial nuclear facilities. These agencies have access to sensitive information gathered by the intelligence communities. Should they identify a potential threat, the licensees are immediately notified.

Nuclear power plant licensees are also in close communication with local law enforcement agencies to ensure that any security threat in the local areas is promptly identified and communicated. Federal, state and local law enforcement agencies have capabilities to supplement these information networks to enable licensees to obtain advance notification of potential threats. The frequent communications and high degree of cooperation among utilities and with law enforcement agencies enhance physical security measures. The combination of detailed contingency plans plus alerts through local, state and national information networks constitutes a significant security capability.

#### The Industry's Recommendations for Regulatory Improvement

Next let me turn to the recent industry recommendations for specific changes to current regulatory requirements in the area of security. As you know, we have several hundred reactor years of experience in commercial nuclear power plant operations, and both the industry and the regulatory community have reached respectable levels of maturity. In order to sustain the high levels of safety and reliability we have achieved, we periodically factor that experience and maturity back into the process. We examine the structures and procedures we've created and evaluate them to determine whether these structures and procedures are still doing what we intended them to do. That is basically what the industry is doing today in reviewing a broad range of regulatory activities.

Within the past few years, the NRC has promulgated, and all licensees have implemented, regulations that require extensive personnel screening programs before an individual is granted unescorted access to protected areas of nuclear power plants. These include the following:

- Access Authorization Program -- A program that conforms with 10 CFR 73.56, "Access Authorization to Commercial Nuclear Power Plants" as implemented by Regulatory Guide 5.66, "Access Authorization Programs for Nuclear Power Plants." Such a program assures that individuals granted unescorted access to protected and vital areas have trustworthy backgrounds, stable psychological profiles and reliable behavior consistent with the safe operation of the facility. It provides high assurance that individuals granted unescorted access are trustworthy and reliable, and do not constitute an unreasonable risk to the health and safety of the public including a credible potential to commit radiological sabotage.
- Criminal History Check -- The Criminal History Check Program is an integral part of the Access Authorization Program and conforms with the requirements of 10 CFR 73.57, "Requirements for criminal history checks of individuals granted unescorted access to a nuclear power facility or access to Safeguards Information by power reactor licensees." The purpose of the program is to



ensure that proper consideration is given to an individual's past criminal activities, if any, prior to granting permanent unescorted access.

**Fitness-for-Duty Program** -- The Fitness-for-Duty Program conforms with the requirements of 10 CFR Part 26. This program provides reasonable assurance that personnel granted unescorted access to the protected area are reliable, trustworthy and physically able (specifically, drug and alcohol free) to safely and competently perform their duties. The program provides reasonable measures for the early detection of persons who should not be allowed access to the protected area. Results experienced to date from licensee fitness-for-duty programs show that program objectives are being achieved.

**Continual Behavioral Observation Program** -- Each individual granted unescorted access is subject to the Continual Behavioral Observation Program. Management and supervisory personnel are responsible for observing personnel for behavioral traits and patterns that may reflect adversely on their trustworthiness or reliability and reporting those observations to appropriate utility management. The core of the program is the specific training which provides reasonable assurance that management and supervisory personnel have the awareness and sensitivity to detect and report changes in behavior, including suspected alcohol and drug abuse, which adversely reflects upon the individual's trustworthiness or reliability, and then to have the judgement to refer these persons for appropriate evaluation and follow-up action.

Management and supervisory personnel are trained to have the awareness and sensitivity to detect and report changes in behavior which adversely reflects upon the individual's trustworthiness or reliability. This is a continual process while individuals are working inside the protected area. The access authorization and fitness-for-duty requirements, continual behavioral observation programs and industry professionalism programs have enhanced the trustworthiness of the cadre of licensee and contract personnel that make up the workforce which has unescorted access to nuclear reactor plant protected areas. Confidence in workforce trustworthiness is reinforced by training programs designed to increase worker understanding as well as supervisory sensitivity to conditions that could undercut someone's trustworthiness. The insider threat is appropriately addressed by providing high assurance that personnel granted unescorted access to the protected area are trustworthy, reliable and not likely to become involved in acts causing radiological sabotage.

The passage of time and the many changes that have taken place in the world since 1977 when the security regulations were promulgated strongly suggest that it is time to reevaluate the assumptions regarding the design basis threat underpinning current security regulations. We believe it is now possible to refocus security resources without reducing security effectiveness. I must emphasize that safety and reasonable assurance of protection are paramount as we go through this detailed review.

In making these determinations, we spent considerable time reviewing the historical record of our industry as well as having discussions with individuals involved in security outside the nuclear power industry. This included a briefing by the FBI and a review of their

unclassified reports. As a result, we asked the NRC in June 1992, to consider changes in seven specific areas of security requirements and provided a document to support our recommendations.

Enclosed with my testimony is a copy of our letter of December 21, 1992 to Chairman Selin of the NRC, the pertinent sections of the Executive Summary addressing security and Attachment 2 that addresses specifically the seven areas of security that we requested the NRC address.

#### Subcommittee Questions

As a result of all these reviews, we believe that the present NRC regulations and associated security requirements at our plants are more than adequate to protect against intentional acts of destruction directed at our facilities. Again, I must emphasize that this is because of the defense-in-depth philosophy that has been applied at all of our facilities, coupled with the required security programs. The objective is to protect public health and safety through the prevention of uncontrolled release of radioactivity and, if necessary, the mitigation of the event to minimize the offsite consequences.

Both the NRC and the industry have addressed the issue of surface vehicle bombs on numerous occasions. The NRC addressed it in the development of the regulations and, most recently, in a generic letter issued to the industry in 1989. The NRC reviewed this issue again in 1991 in response to a petition during the activities in the Middle East. As a result, each utility has modified its safeguards contingency procedures to address the possibility of a land vehicle bomb. This included reviewing site features to determine land vehicle access approach paths and distances and identifying short range measures to protect against unauthorized vehicle access. We feel, however, that it is prudent to reevaluate the current design basis threat taking into consideration the additional regulations that have been put in place since 1977, the characteristics of the potential terrorist and the world situation today.

The recent events at Three Mile Island and at the World Trade Center in New York City are consistent with the experience of the appropriate Federal agencies, in particular the FBI. The FBI report on terrorist incidents occurring during the period 1980 to 1986 states that 39 percent of the events occurred in New York. The FBI notes, "This is not unexpected since New York, particularly New York City, has a high concentration of government buildings, diplomatic establishments, national monuments, and world renowned commercial and cultural institutions." In the discussion of a behavioral science approach to understanding terrorists in its 1990 terrorism report, the FBI states, "Terrorists carefully assess which targets are most vulnerable, and may conduct surveillance to further develop their intelligence on a target. They select operations that pose a minimum of risk with a maximum chance of success." Although European terrorist groups some years ago attacked nuclear facilities under construction, we are not aware of any assaults against operating nuclear facilities anywhere in the world. In the past, people opposed to nuclear power have chosen to demonstrate at the plant, seek media time and other activities to express their point of view to mass audiences. These groups do not represent the well-trained, well-armed paramilitary force assumed in the current design basis threat. While the results of the investigation into the incident at Three Mile Island are not yet available, it appears that the individual who crashed into the fence

was not a terrorist, but appears to be a confused individual; he was not armed and carried no explosives.

In choosing security areas to reconsider, we focused on enhancing security effectiveness while maintaining, or improving the protection of public health and safety. We feel that the recommendations made to the NRC last June (and reiterated last December) do that. However, we do plan to review the results of the NRC's Incident Investigation Team analysis of the TMI event when available to determine if any element of our request to the NRC should be modified as a result of this additional information. In addition it is our understanding that the NRC is reassessing its previous conclusion that current security arrangements adequately protect public health and safety, given a hypothetical vehicle intrusion into a nuclear plant protected area, and we await the results of that study.

#### Conclusion

In conclusion, Mr. Chairman, I hope that my remarks will be useful to you in your deliberations. Our industry is committed to provide safe, reliable electricity from commercial nuclear power plants. In view of the overall defense-in-depth philosophy that is in place, we feel that we have adequate security around our plants. Again, I must emphasize that physical security arrangements should not be viewed in isolation, but as a part of a multifaceted program that we have at each plant to provide reasonable assurance that public health and safety will be protected. I would like again to emphasize that we are not for a moment sacrificing safety or reasonable assurance of protection in requesting a review of specific areas of security. Our intent is to provide security effectiveness by ensuring that the resources we expend provide the maximum protection to public health and safety.



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**NUCLEAR MANAGEMENT AND RESOURCES COUNCIL**

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Joe F. Colvin  
President & Chief  
Executive Officer

December 21, 1992

The Honorable Ivan Selin  
Chairman  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Chairman Selin:

At the June 25, 1992, NUMARC Board of Directors' meeting you discussed the status of the Commission's review of NRC regulations which have unnecessarily increased costs to licensees without a commensurate safety benefit. You requested specific examples of changes to NRC regulations and regulatory processes that the industry believes were appropriate based upon the industry's knowledge and experience in the operation and management of commercial nuclear power plants and the maturity of the nuclear technology. The purpose of this letter is to provide you with our initial response and, because of the importance of this matter, to request expedited Commission action in the areas identified.

The Executive Summary (enclosed) provides a brief description of the initial results of our review. Attachments 1 through 8 discuss specific issues where we believe immediate action can be taken without further study or analysis. Attachments 9 through 11 address longer-term issues where efforts need to be commenced in the near future to effect positive change in the needed time frames. In addition, we ask the Commission's consideration of the industry's comments on the Systematic Assessment of Licensee Performance (SALP) program, which were submitted on October 20, 1992 (copy included as Attachment 12), where we believe significant changes are also warranted. We will be forwarding information on other issues for your consideration as our evaluations continue.

We look forward to working with the Commission and the NRC staff to address these matters, which are of critical importance to the industry. Because cost control is an urgent problem to the industry, we would like to meet with the Commission in early January to discuss these and related issues to facilitate their timely resolution.

Sincerely,

A handwritten signature in dark ink, appearing to read "Joe F. Colvin". The signature is written in a cursive, flowing style. Below the signature, the name "Joe F. Colvin" is printed in a standard, sans-serif font.

Joe F. Colvin

## EXECUTIVE SUMMARY

Nuclear energy is a key component of our national electrical energy supply mix. However, the availability of nuclear energy in the future is at risk due to continually escalating nuclear generation costs. In order for nuclear energy to remain a viable energy source in the future, the impact on generating costs of the regulatory environment in which it currently operates must be reexamined. To assure the continued safe and reliable operation of nuclear energy plants in a cost-effective manner, the overall regulatory environment, including the practices of the NRC and its licensees, must be reevaluated to ensure that they serve their intended purposes effectively. That will enable licensee resources to be redirected to safety-significant or operationally-important issues, or for unnecessary costs to be reduced.

The NRC has acknowledged that it has the responsibility to require only those measures that reasonably contribute to an adequate level of nuclear safety and has initiated actions to review its regulations to eliminate unnecessary requirements which do not provide corresponding safety benefit. In an address to the NUMARC Board of Directors, NRC Chairman Selin described the status of the initiative that the NRC has undertaken and, in recognition of the nuclear energy industry's knowledge and experience in the operations and management of nuclear power plants, requested that the nuclear industry provide specific examples of regulations and regulatory processes which have unnecessarily increased costs to licensees without a commensurate safety benefit.

The industry has conducted an initial review of existing regulations and regulatory processes to identify such areas. The results of that initial review, and associated recommendations for Commission action, are the subject of this submittal and summarized below. The primary propose of this response is to identify areas and provide data where expedited actions can be taken on important near-term issues facing the NRC and the industry. In addition, this response identifies several longer-term issues where timely action needs to be taken in the near future. In each area, recommendations were developed to facilitate expeditious Commission action to eliminate or modify those regulations or practices that do not serve their intended purpose.

[NOTE: The attachments referred to have been retained in committee files.]

## NEAR-TERM ISSUES

The following near-term issues are regulations and regulatory processes that unnecessarily increase costs without corresponding safety benefit and where sufficient data exist to take immediate action to correct the situation without further study or analysis.

### Fitness-For-Duty (FFD) - (Attachment 1)

The nuclear power industry has acquired three years of experience in the implementation of FFD regulations. The industry has concluded that the current regulations often exceed what is necessary to provide reasonable assurance of freedom from drugs or alcohol, or are in conflict with related requirements in other NRC regulations. Based upon this experience and the knowledge gained from implementing the requirements, the industry has developed a number of recommendations for the modification of those regulations. Those recommendations fall in two major categories: (1) where implementation experience has identified areas where clarification is warranted or changes should be made to more effectively achieve the intended purpose; and (2) where modification is appropriate to eliminate conflicts with related requirements established in the access authorization regulations, or to bring the nuclear power industry's FFD program into alignment with programs in other comparable industries.

The major FFD issues of concern are described in Attachment 1. The appendices to Attachment 1 provide copies of prior correspondence describing other issues of importance. The 14 major issues addressed are the following:

- Reducing the rate of random testing to 50 percent of the total plant work force for all personnel who have unescorted access;
- Modifying the definition of "suitable inquiry" to include a time period for updating that is consistent with the access authorization rule;
- Modifying the rule's application to personnel who have infrequent or periodic unescorted access;
- Extending the refresher training interval from annual to biennial and eliminating the 60-day retraining requirement;
- Modifying the rule to be consistent with the access authorization rule for persons responsible for administering FFD testing programs;
- Authorizing an "alcohol-only" for-cause test in specific circumstances;
- Modifying the requirement for submission of FFD data from individual sites to the utility and from semi-annual to annual reporting;
- Eliminating the second breath test for alcohol when the first test is negative;

- Modifying the preaccess testing requirements to allow equivalency for personnel who have been subject to random testing within the past 60 days;
- Extending the FFD program audits from annual to biennial;
- Modifying the rule to clarify FFD record retention requirements;
- Clarifying requirements for follow-up testing after a first confirmed positive drug test;
- Deleting the requirement for licensees to audit HHS-certified laboratories; and
- Eliminating three unnecessary proposed changes to Part 26 resulting from NRC staff's perceived FFD program shortcomings.

#### Security - (Attachment 2)

Seven revisions to 10 CFR Part 73 have been recommended. These revisions will bring the regulation into line with the current security environment, which has changed significantly since the design basis threat concept was initially promulgated in 1977. The recommended changes will also reduce unnecessary administrative burdens associated with the implementation of these requirements.

First, the industry is recommending that the design basis threat be reassessed to correctly relate to the current radiological sabotage threat. Even though significant terrorism has been experienced in other countries, security requirements for overseas plants are far less prescriptive than NRC requirements. The Commission is strongly encouraged to avail itself of the current assessment by federal intelligence gathering agencies of the terrorism potential at U.S. commercial nuclear power plants.

The industry is also recommending the removal of the following six administrative requirements that have proven to provide no measurable benefit to safety:

- the requirement to maintain vital area door locks;
- posting a guard at any containment entrance to monitor access of personnel and material;
- the requirement that all vehicles be escorted by a member of the security organization while in the protected area;
- the requirement that armed, on-duty security guards be searched before re-entry into the protected area;
- the requirement for security events to be reported before confirmation; and
- the requirement for quarterly submittal of safeguards events logs.

Elimination of these portions of the regulation could be done immediately to eliminate unnecessary, unrealistic, or overly burdensome requirements.

### Emergency Diesel Generator (EDG) Reliability - (Attachment 3)

Generic Issue B-56, EDG Reliability, was identified by the NRC in 1977, and an objective was established of improving EDG reliability to a level of 0.95. Industry performance data demonstrates that an average EDG reliability of 0.98 has been achieved since 1983. Further, the NRC now has docketed commitments from all utilities to maintain either a 0.95 or a 0.975 reliability level, based upon the coping assessment conducted as part of the implementation of the station blackout rule. In light of this demonstrated performance and the industry program for monitoring and maintaining EDG reliability that has been established and effectively implemented in order to ensure that industry performance continues to exceed a reliability rate of 0.95, the industry recommends that Generic Issue B-56 be closed and that no further rulemaking or other regulatory action be taken.

The industry has implemented an initiative to address NRC concerns regarding an individual EDG that exhibits poor performance. However, many licensee technical specifications still require that accelerated testing programs be conducted, notwithstanding conclusive evidence that accelerated testing is detrimental to EDG performance, reliability and availability. Continued accelerated testing is unnecessary and requires the significant expenditure of limited industry resources without any measurable added benefit to public health and safety. Expedited relief from current accelerated testing requirements is requested.

### Radiation Protection - (Attachment 4)

10 CFR Part 20, "Standards for Protection Against Radiation," was issued in May 1991. To date, many other NRC regulations and regulatory guidance containing radiation protection standards and criteria primarily applicable to nuclear power plants (e.g., Part 50) have not yet been revised to be consistent with the current revisions to Part 20. Licensees will be required to maintain and operate with a dual system of radiation protection concepts and methods until such time as standards and guidance are made consistent with the revised Part 20, which will result in impacts unique to nuclear plant licensees without any appreciable benefit to public health and safety. Having two different systems for computing dose projections if an emergency were to occur could potentially lead to confusion of off-site officials and the public. Currently, an NRC generic letter is being developed to provide guidance to licensees on making applications for needed conforming changes to technical specifications. This approach will impact industry and NRC staff resources during the preparation, submittal, review and associated issuance of license amendments. The draft generic letter should be issued for public comment as soon as possible and NRC priorities established to assure timely implementation of the proposed actions. Further, the industry recommends that the NRC pursue expedited rulemaking to allow licensees to defer the changes to technical specifications until 10 CFR Part 50 and related-regulatory guidance are updated.



Piecemeal or uncoordinated efforts in rulemaking, development of guidance, or implementation of requirements pose unnecessary challenges to resources and priorities without commensurate benefit to health and safety. All pertinent regulations and related guidance must be revised in a planned and coordinated manner to achieve consistency throughout NRC radiation protection standards. Schedules should be developed to provide for correct, effective and efficient implementation.

#### Routine and Periodic Reports to NRC - (Attachment 5)

As a result of regulations or as part of technical specifications, licensees are currently required to submit a large number of routine and periodic reports to the NRC. Many of these reports are duplicative or request information that is never used. They could be eliminated or reduced in scope without any impact on safety or the NRC's ability to analyze safety significant information.

The industry recommends that the NRC develop a set of criteria for data collection and review all reporting requirements in relation to those criteria. The subsequent elimination or restructuring of certain reports would result in a set of reporting requirements that are properly focused on information that is significant and thus necessary to be reported. Current ongoing activities, which are addressing specific reporting requirements but without the benefit of evaluation against consistent criteria, should be integrated into this larger effort in order to ensure that overall policy guidance is consistently applied in determining the need for pertinent information to be reported.

#### 10 CFR Part 50, Appendix J, Containment Leak Rate Testing - (Attachment 6)

The NRC is currently considering a revision to 10 CFR Part 50, Appendix J, which contains both clarifications of current requirements and new requirements that will, in some cases, unnecessarily increase occupational exposure and contamination and increase utility implementation costs without a corresponding increase in safety. The industry recommends that leak rate testing requirements be established on a performance basis, similar to the approach being taken in the NRC's Maintenance Rule.

#### Dedication of Commercial Grade Items - (Attachment 7)

The current provisions of 10 CFR Part 21 relating to the dedication of commercial grade items for use in safety-related applications, and the associated reporting requirements for manufacturers, suppliers, and sub-tier suppliers, are ineffective and cause unnecessary delays in obtaining equipment or replacement parts needed for use as basic components. These provisions, therefore, may inadvertently have

the potential to adversely affect safe operation of nuclear power plants as well as unnecessarily increasing costs.

The industry recommends that Part 21 be revised to make it more practicable and to assure that it does not inadvertently interfere with safe plant operations. Changes to Part 21 are proposed in three areas:

- the replacement of the existing definition of commercial grade items with a more practicable definition;
- the inclusion of a flexible generic process for dedication of commercial grade items for safety-related use; and
- the clarification that the entity performing the dedication of a commercial grade item is responsible for discovering, evaluating and reporting deficiencies pursuant to Part 21 requirements.

The industry intends to file a petition for rulemaking to request that Part 21 be appropriately modified, as described above, to accommodate the current procurement environment in a way that will not adversely impact plant safety.

#### Adoption of Improved Standard Technical Specifications - (Attachment 8)

The NRC and the nuclear industry efforts to develop improved standard technical specifications have now been completed and those technical specifications are now ready to be implemented. However, under current regulatory requirements, licensees electing to adopt the improved standard technical specifications must obtain a license amendment pursuant to 10 CFR 50.91. Because of the nature of the current licensing process, significant and unnecessary resources must be expended by licensees and the NRC on duplicative license amendment reviews to enable the standard technical specifications to be adopted. This impedes the achievement of the goals to improve plant technical specifications.

The industry recommends that a new section be added to the regulatory process for license amendments to facilitate the adoption of the standard technical specifications. The industry intends to file a petition for rulemaking that will recommend an additional subsection be added to § 50.91 to establish a new regulatory process for the adoption of the improved standard technical specifications. The proposed additions would provide a structured, predictable and administratively efficient process that would promote the adoption of the improved standard technical specifications.

## LONGER-TERM ISSUES

The following are longer-term issues where efforts need to be commenced in the near future to effect positive change in a timely manner:

### Independent Spent Fuel Storage Installations (ISFSIs) - (Attachment 9)

Physical security requirements for ISFSIs, as specified by 10 CFR Part 72, impose an excessive burden on licensee resources with no commensurate safety benefit because they do not reflect probable effects of credible acts of radiological sabotage. Limited licensee resources are unnecessarily spent procuring, operating, maintaining, and testing security equipment that provides marginal safety benefit.

Current activities are underway in the NRC to revise the safeguards requirements for ISFSIs. In doing so, the industry recommends that the NRC ensure that it realistically evaluates credible security threats and establishes required security measures accordingly. The revised requirements should be applied on a consistent basis for all ISFSIs, regardless of whether the facility is under the jurisdiction of the Office of Nuclear Reactor Regulation or the Office of Nuclear Material Safety and Safeguards. The review schedule of the likely consequences of radiological sabotage to ISFSIs and the revisions to the physical security provisions of Part 72 to make it consistent with credible threats should be accelerated in order to reduce the significant resource burden that current regulations impose without realistic justification.

### Regulations Marginal to Safety - (Attachment 10)

The NRC is currently undertaking efforts to identify, assess, and eliminate regulatory requirements that have a marginal importance to safety and yet impose a significant regulatory burden on licensees. The review currently includes the following regulations:

- 10 CFR Part 50, Appendix J - Containment Leak Rate Testing
- 10 CFR Part 50, Appendix R - Fire Protection
- 10 CFR Part 50, Appendix B - Quality Assurance
- 10 CFR 50.44 - Combustible Gas Control
- 10 CFR 73.55 - Security
- 10 CFR 50.49 - Environmental Qualification
- Post-Accident Sampling Systems (NUREG-0737 and Regulatory Guide 1.97)
- 10 CFR 50.54(f) - Requests for Information

The regulations should initially be prioritized in terms of cost impact and benefit. The NRC's safety goal policy statement and Principles of Good Regulation should be utilized when evaluating the regulations, keeping in mind the possible application of risk-based and/or performance-based approaches to the regulations. In addition, the review should consider not only the regulations themselves but also the associated regulatory documents and processes that effect the implementation of the regulations. An expeditious plan of action, including milestones and schedules, should be developed for the modification or elimination of these regulations to enable unwarranted burdens on industry or NRC resources to be eliminated promptly. The goal should be to complete all necessary changes by 1995.

#### Regulatory Threshold - (Attachment 11)

In recent years, the Commission, the Advisory Committee on Reactor Safeguards and the NRC staff have become interested in various concepts, such as risk-based or performance-based regulations, that have been developed to improve the implementation of the Commission's safety goal policy (SGP). These activities have promise but have not yet met with success because of the broad and detailed consideration each requires.

Methods must be established to effectively implement the objectives of the SGP and apply, where appropriate, the concepts of risk-based and/or performance-based regulation. These methods should include extensive use of probabilistic safety assessment techniques as an alternative or supplement to the use of subjective judgement and deterministic, conservative analyses that formed the basis of many of the existing regulations.

Extensive interaction among the industry, the NRC and the public will be necessary to establish a new regulatory threshold. However, based on the operational experience gained since the current body of regulations was adopted, it is appropriate to take the time and expend the resources to examine the status quo and assess how reactor and public safety can be achieved in a more efficient and effective manner.

#### Systematic Assessment of Licensee Performance (SALP) Program - (Attachment 12)

On October 20, 1992, the industry submitted its views on the SALP program in response to the Commission's request for public comments. A copy of those comments is attached. The industry believes that it is in the public interest that an effective and efficient regulatory process, based on objective criteria, be established and administered fairly. The manner in which the SALP program is currently administered and used should be an important component of the NRC's review of whether the current NRC regulations and the associated regulatory environment that have developed appropriately serve the public interest.

## Conclusion

The industry intends to continue to provide its views to the Commission as it reviews regulations and regulatory activities in order to eliminate unnecessary burdens associated with NRC regulation while continuing to assure the current high levels of safety. Additional information will be compiled and presented as the industry's efforts mature.

In an equally important effort, the nuclear industry is reviewing ways to improve the manner in which utilities react to and implement NRC regulations and regulatory processes. As a result of working within the current regulatory environment, a culture has developed within nuclear utilities in which it has become acceptable for personnel to accede to an NRC staff demand or expectation, regardless of whether it is truly necessary or provides a significant benefit to the overall safety of the plant. When viewed on an overall cost basis, the total impact of these decisions is very significant.

The industry intends to analyze this situation to assist utilities in more effectively carrying out their responsibilities, both as NRC licensees to operate their reactors safely, and to their ratepayers to provide electrical energy at the lowest reasonable cost. Furthermore, the industry intends to review the extent to which utility personnel, knowingly or unknowingly, contribute unnecessarily to costs. The use of external resources to conduct regulatory work and the effectiveness of special issue groups on regulatory issues will also be evaluated. Because licensees bear the ultimate responsibility for day-to-day plant operations, decisions regarding the most prudent commitment of resources can only be made by the licensee.

It is expected that this introspective evaluation will be performed both throughout the industry and individually within each utility. As results are compiled, information will be provided to the Commission for its consideration, where appropriate.

The actions being initiated through these activities are vital first steps to controlling the increasing costs of nuclear generation, without compromising public safety. Though the responsibilities of the NRC and its licensees are much different, they are complementary. Effective communication and interaction between the NRC and the industry is necessary to effect the positive changes the public interest requires.

**TESTIMONY BEFORE THE U.S. SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC  
WORKS, SUBCOMMITTEE ON CLEAN AIR AND NUCLEAR REGULATION**

**MARCH 19, 1993\***

**Dr. Bruce Hoffman,  
RAND, Santa Monica, California**

**Introduction**

The World Trade Center bombing marks a watershed in our and others' perceptions of America's vulnerability. Until last month's blast, many Americans regarded terrorism as something that happened elsewhere: a problem endemic to the already violent Middle East and revolution-prone countries of Latin America that occasionally spilled over onto the streets of Paris, London, and Madrid. The bombing shattered not only that complacency, but America's sense of security. Though frequently the target of terrorists abroad, the attack demonstrates that Americans can no longer believe themselves immune to such violence within their own borders. Whether the attack ultimately proves to be a single, isolated event or, as some have warned, the beginning of a new wave of terrorism in the United States, the fact remains that the bombing—and the evidence that suggests a conspiracy of possible international dimensions—is the most serious terrorist incident to have occurred in this country in nearly two decades.

In my testimony today, I have been asked to lend some perspective to the World Trade Center bombing—as well as to an incident that occurred last month at the Three Mile Island nuclear power plant, in Ephrata, Pennsylvania when an intruder entered the facility and remained at large for four hours—with respect to the potential terrorist threat to commercial nuclear power plants. As you may know, RAND has long been involved in research concerning terrorism in general and the likelihood of nuclear terrorism in particular. During the 1970s, we assisted in the development of the U.S. Department of Energy's (DOE) adversary characterization and threat

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**\*The views I will express today are my own and do not necessarily represent those of RAND or any of its research sponsors.**

guidelines<sup>1</sup> and in 1986 RAND participated in the reassessment conducted by the DOE.<sup>2</sup> Since that time, we have conducted additional studies on how trends in both international and domestic terrorism might affect the likelihood of nuclear terrorism,<sup>3</sup> on insider crimes and the threat to DOE nuclear programs and facilities,<sup>4</sup> and the characteristics of potential force-on-force attacks (i.e., armed attacks against defended targets) against DOE installations.<sup>5</sup> In addition, five years ago I testified before a House of Representatives subcommittee similarly addressing the adequacy of the NRC's design basis threat in respect of vehicular intrusion.<sup>6</sup> While some of my testimony summarizes RAND's work on these issues, I should point out that the views I will express today will be my own; they do not necessarily represent those of RAND or any of its research sponsors.

### **The Potential Terrorism Threat to Commercial Nuclear Power Plants**

For more than two decades experts around the world have debated whether terrorists might someday attack nuclear power plants in order to acquire the strategic nuclear material needed to build a nuclear weapon, obtain radioactive materials for use in an act of blackmail or coercion, or simply to cause radioactive substances to be released into the environment and thus contaminate surrounding areas.<sup>7</sup> The dramatically altered international environment

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<sup>1</sup>See Peter deLeon, et al., *Attributes of Potential Criminal Adversaries of U.S. Nuclear Programs* (Santa Monica, CA: RAND, R-2225-SL, February 1978); Gail Bass, et al., *Motivations and Possible Actions of Potential Criminal Adversaries of U.S. Nuclear Programs* (Santa Monica, CA: RAND, R-2554-SL, February 1980); and, Gail Bass, et al., *The Appeal of Nuclear Crimes to the Spectrum of Potential Adversaries* (Santa Monica, CA: RAND, R-2803-SL, February 1982).

<sup>2</sup>See Bruce Hoffman, et al., *A Reassessment of Potential Adversaries to U.S. Nuclear Programs* (Santa Monica, CA: RAND, R-3363-DOE, March 1986); and, Bruce Hoffman, *Terrorism in the United States and the Potential Threat to Nuclear Facilities* (Santa Monica, CA: RAND, R-3351-DOE, January 1986).

<sup>3</sup>See Peter deLeon and Bruce Hoffman, *The Threat of Nuclear Terrorism: A Reexamination* (Santa Monica, CA: RAND, N-2706 January 1988); and, Bruce Hoffman, *Recent Trends and Future Prospects of Terrorism in the United States* (Santa Monica, CA: RAND, R-3618, May 1988).

<sup>4</sup>Bruce Hoffman et al., *Insider Crime: The Threat to Nuclear Facilities and Programs* (Santa Monica, CA: RAND, R-3782-DOE, February 1990).

<sup>5</sup>Christina Meyer, Jennifer Duncan, and Bruce Hoffman, *Force-on-Force Attacks: Their Implications for the Defense of U.S. Nuclear Facilities* (Santa Monica, CA: RAND, N-3638-DOE, 1993).

<sup>6</sup>Testimony of Bruce Hoffman in Oversight Hearing Before the Subcommittee on General Oversight and Investigations of the Committee on Interior and Insular Affairs, House of Representatives, "The Threat of Sabotage and Terrorism to Commercial Nuclear Powerplants," Washington, D.C., March 9, 1988, Serial No. 100-43, pp. 70-79; also published as *The Potential Terrorist threat to Commercial Nuclear Facilities* (Santa Monica, CA: RAND, P-7450, March 1988).

<sup>7</sup>The threat was first articulated in 1975 by Brian Michael Jenkins, then a member of The RAND Corporation research staff, in *Will Terrorists Go Nuclear?* (Santa Monica, CA: RAND, November 1975, P-5541). In response to the escalation—and intensification—of international terrorism during the mid-1980s (in particular the series of suicide car- and

today—where a “new world order” is emerging in the wake of the cold war—has focused renewed attention on this debate. Indeed, at a time when old empires and countries are crumbling and new ones are being built, the possession of a nuclear bomb or the development of a nuclear capability may become increasingly attractive either to new nations seeking to preserve their sovereignty or to would-be nations seeking to attain their independence. In both instances, terrorists may find new roles for their skills and expertise: they could be ordered by their own governments or employed by other countries either to steal nuclear weapons or strategic material from another country or themselves be paid to stage a covert attack either with a nuclear device or against a nuclear facility in order to conceal the involvement or complicity of their state patron. In this respect, the lesson of Iraq’s overt invasion of Kuwait looms large. In the future, terrorists may become the “ultimate fifth column”: a clandestine, cost-effective, force used to wage war covertly against more powerful rivals or to subvert neighboring countries or hostile regimes.

Let me briefly revisit this long-standing debate in light of both recent terrorism trends and the events in New York and Pennsylvania last month. Before doing so a significant caveat is necessary. It is difficult to render a conclusive assessment on the threat to commercial nuclear power plants or the security of nuclear systems because no viable attack against such facilities has yet occurred and there are no “lessons” to be drawn from past experience. Although various disturbances and arguably minor incidents of terrorism or sabotage in or against nuclear plants in the United States and elsewhere admittedly have taken place, **none** has endangered any part of their nuclear component, much less produced radioactive fallout. Nor have there been any **credible** threats from terrorists or other adversaries against nuclear power plants. With the exception of three—radioactively inconsequential—incidents against *non-operational* or *newly completed* nuclear power plants during the 1980s—that occurred in countries experiencing widespread civil insurrection like South Africa (where guerrillas penetrated the heavily guarded Koeberg nuclear power plant near Cape Town and damaged the control room) and Spain (where Basque terrorists fired a rocket-propelled grenade against a reactor containment tower then under

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truck-bombings against United States and other foreign targets that occurred in the Middle East between 1983 and 1985) the debate acquired new relevance. Two contrasting views are evident, for example, in the testimonies of Jenkins and Paul Leventhal, the founder and president of the Washington, D.C.-based Nuclear Control Institute (a non-profit, public policy research institution) before the U.S. Congress, U.S. House of Representatives, Subcommittees on Arms Control, International Security, and Science, and on International Economic Policy and Trade. hearings held on July 24, 1985. See also, the proceedings of the conference sponsored by the Nuclear Control Institute and the State University of New York Institute on Studies in International Terrorism on “International Terrorism: The Nuclear Dimension” held in Washington, D.C., 24-25 June 1985 published in Paul Leventhal and Yonah Alexander (eds.), *Nuclear Terrorism: Defining the Threat* (Washington, D.C.: Pergamon-Brassey’s, 1986).



construction in Lemoniz)<sup>8</sup> and one in the United States (the bombing in May 1986 of the three of the four off-site power lines leading to the recently completed Palo Verde nuclear power plant in Arizona)<sup>9</sup>—terrorists have neither attacked nuclear facilities, stolen nuclear weapons or weapon-grade nuclear materials, nor even committed credible nuclear hoaxes.<sup>10</sup> Accordingly, any conclusions regarding the possibility of future terrorist attacks on a commercial nuclear power plant are speculative. At the same time, however, speculation informed by extensive research into the motivations, capabilities, intents, and operations of terrorists and other violent adversaries as well as a detailed knowledge of worldwide terrorist patterns and their relevance to potential acts of "nuclear" terrorism can be of assistance in making difficult security decisions in an uncertain environment.

In the past, most analyses of the possibility of nuclear terrorism<sup>11</sup> tended to discount it because few terrorists know anything about the technical intricacies of either developing and triggering such a weapon or of engineering the release of radioactive contaminants from a reactor into the surrounding environment. As a 1988 RAND study observed, "Terrorists are generally not knowledgeable in nuclear technology (e.g., the conversion of stolen plutonium into an explosive device), whereas they have mastered the components of "conventional" terrorist attacks."<sup>12</sup> Moreover, the internal dynamics and decision making processes of terrorist groups have tended to inhibit sudden escalations or changes in either tactics or level of violence, such as a potential act of nuclear terrorism would involve. Political, moral, and practical considerations also were seen to affect terrorist decision making. And, it was thought, there were few realistic demands that terrorists could make by threatening the use of such indiscriminate weapons.

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<sup>8</sup>Both attacks, it should be emphasized, took place before the reactors were completed. See "Response by D.A.V. Fischer, What Nuclear Means and Targets Might Terrorists Find Attractive?" in Leventhal and Alexander, *Nuclear Terrorism: Defining the Threat*, pp. 85-86.

<sup>9</sup>The reactor at the site was non-operational. See Testimony of Daniel Hirsch, Director, Program on Nuclear Policy, University of California at Santa Barbara in Oversight Hearing Before the Subcommittee on General Oversight and Investigations of the Committee on Interior and Insular Affairs, House of Representatives, "The Threat of Sabotage and Terrorism to Commercial Nuclear Powerplants," Washington, D.C., March 9, 1988, Serial No. 100-43, p. 41.

<sup>10</sup>A fourth incident may have been thwarted in 1985 when South Korean naval patrol craft killed four North Korean commandos attempting to come ashore near a South Korean nuclear power plant.

<sup>11</sup>Within the context of this study, the term "nuclear terrorism" is used to encompass a broad range of possible criminal acts. It includes actions against nuclear facilities, military or civilian, including vehicles transporting nuclear weapons, components, or materials; and those in which nuclear weapons, explosive devices, or materials are used to threaten or actually destroy people and property. The first type of action might serve as a precursor to the second; terrorists might assault or infiltrate a facility to steal a weapon or material for use in a future nuclear threat.

<sup>12</sup>deLeon and Hoffman, *The Threat of Nuclear Terrorism: A Reexamination*, p. 4.

The vast majority of terrorist activity throughout the world, moreover, has been primarily "symbolic," designed to call attention to themselves and/or to their causes and not necessarily to kill or harm anyone or wantonly destroy property.<sup>13</sup> Terrorist attacks, therefore, tended not to be directed against people, but against "things"—inanimate objects such as embassies, consulates, government offices, businesses, military installations, and airlines that, by dint of their national identification, are replete with symbolic connotation for the terrorists. Thus, diplomatic targets have historically been the focus of most terrorist attacks,<sup>14</sup> followed by business,<sup>15</sup> airline,<sup>16</sup> military,<sup>17</sup> and civilian targets<sup>18</sup>—with attacks on energy, maritime, transportation, and communications targets comparatively rare, if not statistically insignificant.

Indeed, terrorists historically have rarely attempted, much less contemplated, the infliction of mass, indiscriminate casualties, such as a nuclear incident might entail. Of more than 8,000 terrorist incidents recorded in The RAND Chronology of International Terrorism since 1968, for example, only 52 evidence any indication of terrorists either plotting such attacks or seeking the use of chemical, biological, or nuclear weapons. Viewed from another perspective: since the beginning of the century fewer than a dozen terrorist incidents have been committed that individually have caused the deaths of more than a 100 persons.<sup>19</sup> Thus, in addition to presenting serious operational challenges, it appears that terrorists have tended to regard any act

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<sup>13</sup>Jenkins, *Will Terrorists Go Nuclear?* pp. 6-7.

<sup>14</sup>Accounting for twenty-three percent of terrorist operations in the 1980s; 29 percent in the 1970s, and 32 percent in 1968/69. Source: The RAND Chronology of International Terrorism.

<sup>15</sup>Twenty-one percent of terrorist operations in the 1980s and 1970s; and, 14 percent in the 1970s. Source: The RAND Chronology of International Terrorism.

<sup>16</sup>Twelve percent of terrorist operations in the 1980s; 21 percent in the 1970s; and 38 percent in 1968/69. Source: The RAND Chronology of International Terrorism.

<sup>17</sup>Ten percent of terrorist operations in the 1980s; seven percent in the 1970s; and .03 percent in 1968/69. Source: The RAND Chronology of International Terrorism.

<sup>18</sup>Nine percent of terrorist attacks in the 1980s; eight percent in the 1970s; and, none in 1968/69. Source: The RAND Chronology of International Terrorism.

<sup>19</sup>A bombing in Bessarabia in 1921; a 1925 bombing of a crowded cathedral in Sofia, Bulgaria; a largely unrecorded attempt to poison imprisoned German SS concentration camp guards shortly after World War II; the crash of a hijacked Malaysian passenger plane in 1977; the arson attack at a Teheran movie theater in 1979 that killed more than 400; the 1983 bombing of the U.S. Marine barracks in Lebanon that killed 241; the 1985 inflight bombing of an Air India passenger jet that killed all 328 persons on board; the simultaneous explosions that rocked an ammunition dump in Islamabad, Pakistan in 1988; the bombing of Pan Am flight 103 in 1988 that killed 278 persons; the 1989 inflight bombing of a French UTA flight that killed 171; and the inflight bombing, as in 1989, of a Colombian Avianca aircraft on which 107 persons perished. As Jenkins noted in 1985 of the list upon which the preceding is an expanded version of: "Lowering the criterion to 50 deaths produces a dozen or more additional incidents. To get even a meaningful sample, the criterion has to be lowered to 25. This in itself suggests that it is either very hard to kill large numbers of persons or very rarely tried." Brian M. Jenkins, *The Likelihood of Nuclear Terrorism* (Santa Monica, CA: RAND, P-7119, July 1985), p. 7

of mass indiscriminate killing or destruction as "politically unpalatable." Such massive destruction and/or contamination could be expected to result in public revulsion, alienating any potential sympathizers to their cause (and in some instances actually harming precisely the population the terrorists purport to be representing, protecting or defending), and triggering severe government countermeasures to eliminate the terrorists. Finally, terrorists themselves have repeatedly demonstrated over the past two decades that their goals and objectives can be accomplished using the same tactics and "off-the-shelf weapons" (though perhaps cleverly modified or adapted to their needs) that they have traditionally relied upon. Even in those instances involving comparatively more sophisticated state-sponsored terrorists,<sup>20</sup> the bombs and other weapons used have been exclusively conventional, typically involving "off-the-shelf," as opposed to "high tech" or especially unique weaponry and materiel.

Bombings—mostly simple devices constructed from homemade, improvised explosive materials, commercially purchased or stolen dynamite, and plastic explosives procured or stolen from military stockpiles—have continued to account for roughly half of all the terrorist attacks throughout the world that occur annually: as they have since 1968.<sup>21</sup> The reliance on bombing is not surprising: bombs provide a dramatic, yet fairly easy and often risk-free means of drawing attention to the terrorists and their causes. Few skills are required to manufacture a crude bomb, surreptitiously plant it at the target site, and then be miles away when it explodes. It can be, and frequently is, a one or two-person operation. Bombings therefore typically do not require the same organizational expertise, logistics, and knowledge required of more complicated or sophisticated operations.

It is not surprising, accordingly, to find that the frequency of various types of terrorist attacks decreases in direct proportion to the complexity or sophistication required. Attacks on installations (including, for example, assaults with hand grenades, bazookas, and rocket-propelled grenades; drive-by shootings; arson; vandalism; and sabotage other than bombing), accordingly, is the second most common tactic (accounting for fewer than 20 percent of all

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<sup>20</sup>State-sponsored terrorism is here defined as the general provision by governments of safe havens, logistical assistance, weapons, intelligence and training to terrorist organizations as well as the commissioning of specific terrorist acts at a government's behest.

<sup>21</sup>Forty-nine percent of all terrorist attacks in the 1980s involved bombings; 53 percent in the 1970s; and, 44 percent in the 1968/69. Source: The RAND Chronology of International Terrorism.

operations),<sup>22</sup> followed by assassination/shooting;<sup>23</sup> with kidnapping, hijacking, barricade and hostage situations variously accounting for the small number of remaining incidents.<sup>24</sup>

The fact that these percentages have remained largely unchanged for the past 25 years provides compelling evidence that the vast majority of terrorist organizations are *not* tactically innovative. Radical in their politics, these groups appear to be conservative in their operations, weapons preference and target selection, adhering to the same limited operational repertoire year after year. What innovation does occur is in the methods used by terrorists to manufacture, conceal and detonate explosive devices, not in their tactics or their use of nonconventional weapons (i.e., either simple chemical or biological weapons, much less more complex nuclear ones). Terrorists, accordingly, continue to rely—as they have for more than a century—on the gun and the bomb: rarely deviating from an established *modus operandi*.

However, while there has been little change over time in terrorist tactics, targets, and weapons that might indicate escalation into the nuclear domain; at the same time terrorists have been undeniably more active and considerably more lethal: and this is worrisome.<sup>25</sup> While the total volume of terrorist activity increased by a third in the 1980s compared to the previous decade, over the same time period terrorists killed *twice* as many persons.<sup>26</sup> This increase in lethality is reflected in the 75 percent increase in the number of individual terrorist incidents resulting in fatalities, the 115 percent rise in the number of incidents that caused five or more fatalities and, especially in the 135 percent increase in the number of incidents that caused ten or more fatalities.<sup>27</sup> Five reasons explain this trend:

- The terrorists' apparent belief that lethality attracts—and, indeed, assures—attention;
- The improved effectiveness of terrorist organizations over time;

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<sup>22</sup>Nineteen percent in the 1980s and 1970s and 18 percent in the 1968/69. Source: The RAND Chronology of International Terrorism.

<sup>23</sup>Thirteen percent in the 1980s; nine percent in the 1970s; and only three percent in 1968/69. Source: The RAND Chronology of International Terrorism.

<sup>24</sup>Kidnappings accounted for 10 percent of all terrorist attacks in the 1980s; nine percent in the 1970s; and just .01% in 1968/69; hijackings for four percent of the incidents in the 1980s; seven percent in the 1970s; and, 33 percent in 1968/69; and barricade and hostage for just one percent in the 1980s; three percent in the 1970s; and none in 1968/69. Source: The RAND Chronology of International Terrorism.

<sup>25</sup>The series of attacks that occurred this past week in India—where 232 persons were killed and over 1,400 wounded in Bombay on Sunday and at least another 60 persons were killed in Calcutta on Wednesday—are the most recent cases in point. See Edward A. Gargan, "Blast in Calcutta Kills at Least 45," *New York Times*, March 17, 1993.

<sup>26</sup>According to The RAND Chronology of International Terrorism, 2,536 incidents occurred between 1970 and 1979 as compared to 3,658 between 1980 and 1989; a total of 4,077 persons were killed by terrorists between 1980 and 1989 as compared with the 1,975 killed between 1970 and 1979.

<sup>27</sup>Unless otherwise noted, the statistics presented in this paper are derived from The RAND Corporation Chronology of International Terrorism.

- The fact that terrorists themselves are operationally more capable and adept;
- The increase of state-sponsored terrorism; and,
- The resurgence of terrorism motivated by a religious imperative.<sup>28</sup>

The latter two explanations may, of course, be of some relevance to the World Trade Center bombing.

Thus, if, for example, terrorist lethality continues to increase and the constraints, self-imposed and otherwise imposed on terrorists in the commission of mass murder erode further, actions involving chemical, biological, or nuclear weapons could conceivably become more attractive to some terrorist groups. Moreover, religious and/or ethnic fanaticism could more easily allow terrorists to overcome previous psychological barriers to mass murder than could a radical political agenda. The record of terrorist acts by Shi'a Islamic groups, for example, underscores this point. Although these organizations have committed only eight percent of all international terrorist incidents since 1982, they are responsible for 30 percent of the total number of deaths recorded since then.<sup>29</sup> Hence, a terrorist group of religious zealots, with state support, in a context of an ongoing conflict elsewhere in the world could see the acquisition and use of a chemical, biological, or nuclear capability as a viable option. State sponsorship, in particular, could provide terrorists with the incentives, capabilities, and resources they previously lacked for undertaking an ambitious operation in any of these domains. Combined with intense ethnic enmity or a strong religious imperative, this could prove deadly.<sup>30</sup>

#### **The World Trade Center Bombing, The Three Mile Island Incursion, and the NRC Design Basis Threat**

How does the preceding discussion apply to the more specific question of the potential terrorist threat to commercial nuclear power plants in the United States? Let me emphasize here that no terrorist group has yet attacked an operational nuclear facility. Puerto Rican terrorists, however, have twice threatened to attack commercial nuclear energy facilities and on one occasion warned that they would detonate several radioactive devices.<sup>31</sup> And during the 1990

<sup>28</sup>For a fuller discussion of these reasons see Bruce Hoffman, *Terrorist Targeting: Tactics, Trends, and Potentialities* (Santa Monica, CA: RAND, P-7801, 1992).

<sup>29</sup>According to The RAND Corporation Chronology of International Terrorism between 1982 and 1989 Shi'a terrorist groups committed 247 terrorist incidents but were responsible for 1057 deaths.

<sup>30</sup>Thesis originally advanced by the author in collaboration with Peter deLeon in *The Threat of Nuclear Terrorism: A Reexamination* (Santa Monica, CA: RAND, N-2706, January 1988).

<sup>31</sup>In 1979, the FALN (*Fuerzas Armadas de Liberacion Nacional* or Armed Forces of the National Liberation) threatened to blow up New York's Indian Point commercial nuclear power plant. The following year, during the takeover of the Dominican Republic's embassy in Bogota, Colombia by M-19, a left-wing Colombian group, the FALN—in a show of "revolutionary solidarity"—warned the United States: "You must remember . . . that you

deployment of American military forces to Saudi Arabia following Iraq's invasion of Kuwait, George Habash, the founder and leader of the Popular Front for the Liberation of Palestine (PFLP), threatened American cities with nuclear terrorist attacks.<sup>32</sup> Hence, one problem in assessing the terrorist threat to commercial nuclear power plants is that evaluations can only be based on deductions made from the analysis of both the historical record of *conceptually similar* actions as well as what more recent trends potentially suggest. In respect of the World Trade Center bombing—which is still under investigation—it would be premature to offer any conclusive assessment of its implications on future terrorism in the United States in general, much less against commercial nuclear power plants in particular. Let me therefore offer some preliminary observations on the significance of the Trade Center bombing, how and why it differs from past terrorist incidents that have taken place in this country, and what the incident *possibly* suggests in terms of potential terrorist acts in the future.

The World Trade Center bombing is significant if for no other reason than the fact that six persons are dead and more than a thousand others injured. It was the first terrorist incident in this country since 1986 to kill anyone (when a former police officer was assassinated in Puerto Rico by one of that island's violent separatist groups) and except for the 1975 bomb explosion at New York's LaGuardia Airport that killed 11 persons and wounded 75 others, no other domestic terrorist incident has killed more people.

Admittedly, the U.S. has endured decades of mostly isolated or sporadic campaigns of both "homegrown" and "imported" terrorism. Indigenous terrorist organizations have included left-wing radicals opposed initially to the Vietnam War and later to American military involvement in Central America as well as extremist right-wing/white supremacist organizations espousing racism, anti-semitism and tax resistance. Terrorists motivated by specific, contentious domestic political issues such as legalized abortion, animal rights, and the environment, have also carried out attacks designed to draw attention to or further their own, specific agendas. Finally, individuals belonging to a variety of ethnic and emigre groups residing in the U.S. have used this country as a battleground in which to prosecute historical, often centuries-old enmities against rival ethnic or emigre peoples, internal dissidents or apostates, and, most often, against the diplomatic representatives of governments whom these groups oppose. Despite some

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have never experienced war in your vitals and that you have many nuclear reactors." In addition, in 1975, a Puerto Rican group (believed to be the FALN) warned it would detonate 100 bombs, of which 25 were alleged to contain radioactive material. See Hoffman, *Terrorism in the United States and the Potential Threat to Nuclear Facilities*, pp. 7-8.

<sup>32</sup>"Palestinian radical urges nuclear terror," *Washington Times*, September 4, 1990 and Reuters, "Guerrillas 'have finger on trigger'," *The Guardian* (London), September 19, 1990. See also, Reuters, "Habash Reportedly Leaves Syria and Moves to Iraq," *New York Times*, September 3, 1990.

expressions of sympathy and understanding of the terrorists' goals and motivations, the ethnic or emigre communities that the terrorists purported to represent rarely provided explicit support of their violent actions and over time were increasingly alienated or embarrassed by the terrorist acts ostensibly committed in their name.

The World Trade Center bombing, however, differs from these previous instances of domestic terrorism in a number of respects. Our sense of immunity—however illusory it may actually have been<sup>33</sup>—is now irrevocably lost. Despite the rapidity with which the case was cracked, American law enforcement's long string of impressive successes in thwarting the commission of violent acts by foreign terrorists in this country has ended. In this respect, the psychological defenses surrounding the U.S. have also been breached, which may possibly encourage future attacks. The perception believed to be prevalent among foreign terrorists concerning the difficulties of operating in the U.S.—which may have restrained past inclinations to carry out attacks in this country—have arguably eroded forever. Moreover, terrorists now have a somewhat better picture of how American law enforcement reacts and responds to terrorist acts, what clues it seeks, and what leads are followed. Accordingly, should terrorists again decide to strike here, it is unlikely that they will make the same mistakes that led to the accused bombers' speedy apprehension.

Furthermore, despite the accused bombers' almost comical ineptitude in avoiding capture, they were able to shake an entire city's—if not country's—complacency. If "amateurs" using ordinary, commercially-available materials can fashion a simple bomb and cause so much damage and destruction, one shudders to think what international terrorism's genuine "professionals" could accomplish. Moreover, terrorism yet again has been shown to work—and to pay vast dividends in attention and publicity for comparatively little effort. The bombing itself and its attendant success in galvanizing the American media and capturing the country's undivided attention, sends a powerful message to terrorists everywhere and may therefore encourage imitators.

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<sup>33</sup>Indications our sense of immunity was illusory had already surfaced repeatedly during the 1980s. In 1987 a member of the renegade Palestinian Abu Nidal terrorist organization—and naturalized American citizen—was discovered living in Puerto Rico and in the process of establishing a network of terrorist cells and attendant support apparatus along the U.S. East coast. He was extradited to Israel in 1989 on charges that he led an attack on a civilian bus three years before. Later that year, three Canadians of Lebanese descent were arrested by an alert Vermont police officer shortly after they crossed the border from Quebec en route to New York on a bombing mission. And, in possibly the most serious domestic terrorist incident until the Trade Center bombing, a Japanese terrorist sent to the U.S. in 1988 by Colonel Qaddafi on a mission to avenge the retaliatory airstrike on Libya two years before, was apprehended on the New Jersey Turnpike before he could carry out a bombing attack in lower Manhattan.

Finally, the evidence thus far revealed by law enforcement in connection with the bombing may represent only the tip of the iceberg. The suspicious transfer of funds from an overseas bank to a joint account maintained here by the accused bombers just before the Trade Center blast raises the possibility of foreign involvement in, if not direction of, the operation. Moreover, the fact that, since 1985, at least two other worshippers at the same Jersey City mosque the two accused attended have also been implicated in terrorist or terrorist-related acts suggests the possibility that the Trade Center attack may not have been an isolated incident, but is part of some wider, long-term conspiracy, perhaps involving additional persons both in this country and abroad.<sup>34</sup>

Given the above potential implications of the World Trade Center bombing, a *re-evaluation* of the United States' ability and preparedness to respond to potential future acts of terrorism in this country—including those possibly involving commercial nuclear power plants—is not only prudent, but necessary. Indeed, the February 7, 1993 incident at Three Mile Island—when a lone individual crashed his station wagon through two chain-link fences into the facility's "protected area" and managed to elude security guards for four hours—sounds a cautionary note.<sup>35</sup> Much like the "amateurish" terrorists who caused so much damage and destruction at the World Trade Center, one similarly shudders to think what "professional" terrorists, well-armed and trained in combat skills, driving something more formidable than a Plymouth station wagon could accomplish should they decide the defenses and security measures at this country's commercial nuclear power plants were permeable and easy to penetrate.

The Three Mile Island incident further underscores a potential gap in the Nuclear Regulatory's (NRC) design basis threat that has been debated since at least 1988: specifically that it does not "recognize the possible use of land vehicles for the breaching of perimeter barriers and transporting adversary personnel and their equipment"; assuming instead that adversaries would enter the facility on foot to carry out an attack.<sup>36</sup> When I testified before the House subcommittee investigating this same issue five years ago, I stated that it "seems self-evident that

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<sup>34</sup>The first incident involves the arrest, in December 1985, of Sultan Ibrahim El Gawli, an Egyptian-born travel agent, by U.S. Customs Service officers. El Gawli was convicted of attempting to export 150 pounds of C-4 plastic explosives, 100 blasting caps, remote detonators and a 9-mm. silencer-equipped pistol to Palestinian terrorists in Israel and the Occupied Territories. He served 18 months in prison and has since been released. The second, is the assassination of Rabbi Meir Kahane by El Sayyid A. Nosair, who also was born in Egypt and like El-Gawli and the two World Trade Center bombing suspects—Mohammed Salameh, and Nidal Ayyad—worshipped at the Masjid al-Salam Mosque in Jersey City. See John Kifner, "Kahane Suspect Is a Muslim With a Series of Addresses," *New York Times*, November 7, 1990.

<sup>35</sup>Matthew L. Wald, "Gate Crasher Shakes Up Nuclear Debate," *New York Times*, February 11, 1993.

<sup>36</sup>See Federal Register, vol. 52, no. 251, December 31, 1987, pp. 49418-49420.



the NRC's design basis threat should be amended to include land vehicle use by potential adversaries. In each of the six adversary attributes and characteristics (encompassing terrorist assault, robbery, burglary, bombing, sabotage, and commando raid) identified in a previous RAND study of potential threats to domestic nuclear facilities,<sup>37</sup> use of land vehicles figured prominently as a likely mode of transport to the intended target. Another RAND study, which assessed the outcome of a selected sample of raids executed by small organized military forces or irregular paramilitary groups (i.e., guerrilla and terrorist organizations), found that land vehicles had the highest rate of success of all the vehicle types used by raiding parties to travel to and from their targets."<sup>38</sup> In light of the February 7th incident, this observation remains equally—if not even more—relevant today.

Finally, the nuclear industry has proposed that a number of regulatory requirements associated with the insider threat that appear to be only marginally effective should be relaxed. It is argued that, because personnel are monitored more closely now than in 1978, when the security regulations were first drawn up, that some of these requirements can be dispensed with. I am not sufficiently familiar with the specific regulations or arguments to render any definitive judgment. I would, however, like to call the Subcommittee's attention to a RAND report published in 1990 that explored the characteristics of 62 reported insider crimes in order to gain insight into potential threats to the security of DOE nuclear programs.<sup>39</sup>

Since there have been few actual insider criminal incidents against nuclear facilities, we relied in this study on analogous crimes whose aims and operations were similar to those of possible future crimes involving nuclear facilities. The report concluded that the insider criminal is among the most difficult and dangerous adversaries to defend against. He or she may be young or old, a long time employee or not. Financial gain was most likely to motivate an insider to help outsiders perpetrate a crime. Significantly, even those insiders who assisted ideological (i.e., terrorist) groups did so, not solely in support of the groups' goals, but, in fact, to reap monetary and emotional rewards for themselves. However, while financial gain may be the insider's predominant motivation, additional elements such as family ties, an intimate relationship, disillusionment or disgruntlement, misplaced altruism or ideological allegiances may play a role in the decision to commit or abet a criminal act against an employer. Insiders, we found, can accomplish great damage acting either alone, in cooperation with fellow insiders, or in league with outsiders.

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<sup>37</sup>deLeon, et al., *Attributes of Potential Criminal Adversaries of U.S. Nuclear Programs*, pp. 43-49.

<sup>38</sup>See Bruce Hoffman, *Commando Raids: 1946-1983* (Santa Monica, CA: RAND, N-2316-USDP, October 1985), pp. 14-17.

<sup>39</sup>Hoffman et al., *Insider Crime: The Threat to Nuclear Facilities and Programs*.

Perhaps the most important finding of the study was that which related to planning and security. In most of the incidents we examined the success of the crime seemed to depend less on detailed planning or expert execution than on the exploitation of existing security flaws. Indeed, most of these crimes did not require sophisticated planning but rather were often mere targets of opportunity. This is a point brought out by the airline security official, quoted in the Nuclear Regulatory Commission report on insider crime published in 1980,<sup>40</sup> who stated that most high value losses are not system failures, but people failures. In this respect, guard forces emerged as a special and particularly vexing problem, as guards were responsible for 4.1 percent of the crimes committed against the guarded targets in our database. Closely related to this is the observation that it is not necessarily the security routines themselves that are wanting, but the related fact that they often are not properly followed.

Essentially, we concluded that no organization, no matter how ingeniously protected, can operate without some trust in individuals on all levels. Beyond a certain point, security considerations in hiring, guarding, controlling and checking people can become so cumbersome as to impede the operation of the facility they are meant to protect from intrusion and interference. Thus this problem illuminates the problem inherent in all aspects of the nuclear issue: one accident or one successful crime is one too many. If a bank is robbed, or diamonds are stolen, or some factory is sabotaged or vandalized, society and the victim can generally absorb this without major disruption or discomfiture. But the social and political—as well, obviously, as the actual physical—fallout from a nuclear crime is such that we cannot be satisfied with adequate, or even very good, protection. On the other hand, total security can never be attained. What is feasible, however, is for security officials to keep all possibilities in mind at all times, so as to avoid surprises and be prepared at least for damage minimization, if damage prevention fails.

### Concluding Remarks

One final observation seems in order: while the volume of worldwide terrorism fluctuates from year to year, one enduring feature is that Americans remain favored targets of terrorists abroad. Since 1968, the United States has annually headed the list of countries whose nationals and property are most frequently attacked by terrorists.<sup>41</sup> This is a phenomenon attributable as much to the geographical scope and diversity of America's overseas commercial interests and the large number of its military bases on foreign soil as to the U.S.'s stature as a superpower and leader of the free world. Terrorists, therefore, are attracted to American interests and citizens

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<sup>40</sup>S.A. Mullen et al., *Potential Threat to Licensed Nuclear Activities from Insiders (Insider Study)*, Division of Safeguards, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, NUREG-0703, Washington, D.C., July 1980.

<sup>41</sup>Followed by Israel, France, Great Britain, West Germany, the Soviet Union, Turkey, Cuba, Spain, and Iran. Source: The RAND Chronology of International Terrorism.

abroad precisely because of the plethora of readily available targets; the terrorists' perceived difficulty of operating and striking targets in the U.S. itself; the symbolic value inherent in any blow struck against U.S. "expansionism," "imperialism," or "economic exploitation;" and, not least, because of the unparalleled opportunities for exposure and publicity from perhaps the world's most extensive news media that any attack on an American target—especially one that involves civilian casualties—assures. These reasons suggest that, despite the end of both the cold war and the ideological polarization that divided the world, the U.S. will nonetheless remain an attractive target for terrorists seeking to attract attention to themselves and their causes. Moreover, as the only superpower, the U.S. may likely be blamed for more of the world's ills—and therefore could be the focus of more terrorist attacks—than before.<sup>42</sup> Thus, there may be both opportunity and motive for future terrorism against the United States. These added to what appears by the World Trade Center bombing to be our new vulnerability to terrorism may therefore bring new dangers to us.

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<sup>42</sup>One can envision ethnic, nationalist, and irredentist minorities turning to the U.S. for support and intervention which, if not provided, could act as a catalyst for increased anti-American terrorism designed to coerce the U.S. to intervene on their behalf or to punish the U.S. for not intervening. Of course, terrorism designed to protest or reverse U.S. intervention in local conflicts (such as was the case in Lebanon during the 1980s) is likely to continue as well.

3/19/93

UNITED STATES SENATE  
ENVIRONMENT SUBCOMMITTEE  
ON NUCLEAR REGULATIONS

THREAT OF SABOTAGE AND TERRORISM  
TO COMMERCIAL NUCLEAR POWERPLANTS

Testimony of:

SCOTT D. PORTZLINE

private citizen

Harrisburg, PA

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This testimony should prove helpful because I am proof that an ordinary citizen can gain significant knowledge of nuclear plants which could facilitate a willful act of destruction resulting in a radiological release. During nine years of research I have obtained thousands of pages of publicly available documents which become a "how-to book" for the saboteur. Using NRC documents (especially sabotage prevention and incident reports) a saboteur can develop a fool-proof plan which could, with relative ease, overwhelm a security force and cause irreversible and catastrophic damage at a commercial nuclear plant.

Two witnesses have testified that an intruder would need a great deal of knowledge about nuclear plants and bombs to pose a serious threat. These statements may have given the impression that this is another "hardening" factor. However, knowledge of bombs (the World Trade Tower saboteurs used bottled hydrogen) and plants is obtainable and understandable in less than a week of study. Ironically, through my research I learned that in 1977 a NRC systems analyst (Carl Michelson) wrote a now classified report describing how anyone off the street using public documents and tools or explosives could cause a meltdown. "A janitor could be trained to do it" (Pierce Nye was a janitor). "And there are things he could do to make sure it's irreversible."

Explosives are not needed, nor are timing devices and radio controlled triggers. Yet, the FBI is hoping that the act of obtaining knowledge or devices will "tip-off" their intelligence department. I am uncomfortable with the ease of obtaining information. Upon request, I am provided free microfiche copies of NRC documents by the State Library at Harrisburg. I review them on a \$25 second-hand microfiche reader in the privacy of my home. I am able to find documents by using a "keyword search" on the library's computerized catalog or from a home computer linked through the telephone. I enter --NUCLEAR SABOTAGE-- and get a list of titles and accession directions.

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However, the public has a right to know if plant security is actually able to protect the public health and safety. A proper balance must be struck and I'm not sure how to do that. But, the NRC and licensees have not deserved the respect of observers and we should not be forced to rely on the industry's stamp of approval. That TMI had the highest rating security force proves the point. "A Subroutine for Path-Ordering of Sabotage Targets" warns that the true value of plant security is not the number of incidents: this number only reflects attempts. Your oversight committee must aggressively pursue a full measure of updated policies because the NRC has shown a long history of mismanagement. The Kemeny Commission and the US House of Representatives have concluded this years ago.

- o There are hydraulic barriers that can be raised in seconds so that a plant does not have to constantly open and close a gate. Detection of intruders must be followed with their immediate capture. A Sandia National Laboratories time analysis study shows a patrolling guard only has a 1/8 chance of visually detecting an intruder at the perimeter. Pierce Nye hid for 4 hours. GPU president Philip Clark seemed proud that his detection equipment worked. This was troublesome to me. Where are the videos from surveillance monitors he claimed are also guarding the protected area fence? Guard towers are needed. A K-9 patrol may be able to "sniff-out" the intruder in minutes.

- o NRC regulations require 10 armed guards with the licensee able to petition for only 5 armed guards. If one is posted at the control room door, reactor building door(s), auxillary building door(s), etc. who is left to search the enormous plant and be expected to overcome sophisticated weaponry? Mr. Clark was not clear about the number of armed guards that actually searched the plant. This number was probably low with no one available in the first half hour. Prioritizing vital doors should not be at the expense of an immediate

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armed search. Guard towers would be a good hardening factor.

o TMI has seen other intruders in past years. One was not detected for 20 minutes and another was a boater who needed assistance but couldn't find anybody for 30 minutes. At times the river is low enough to walk onto the island. This has happened. Clearly, detection equipment cannot be relied upon and a guard must correctly assess every alarm. There are false alarms and sometimes a guard will assume an employee has accidentally tripped the alarm when no threat is spotted. I know first-hand of poor security. In March of 1979 I walked into the main radar site and computer center of NORAD and SAC in Thule Greenland; a top secured site with the use of deadly force authorized. I remained unidentified and unapproached even though 2 guards looked at me.

In the recent weeks I have spoken to NRC duty officers who have never heard of the Sandia Truck Bomb Analysis. Over the phone they try to comfort me (the public) by claiming a bomb can't cause damage leading to a release of radiation, and that a 707 jet crash would not cause a release. The Sandia Truck Bomb Analysis also found that US reactors are not designed to withstand the impact of a 707 and other aircraft as we have been told. This is important because of the close proximity of TMI to the Harrisburg International Airport with flightpaths virtually overhead. There isn't a "no fly zone" like the one over the White House and Capitol.

The innacurate information of the NRC duty officers is no surprise to me. In June of 1984, a US House of Representatives Subcommittee on Energy found: "The NRC shows a shocking disregard for legal requirements and its own regulations, unfamiliarity of the major issues in the cases it decides, and failure to control and discipline staff when staff has misled them and withheld critical information from them. The transcripts show a preoccupation with expediting action and the economic consequence of delay, a matter which is

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totally outside the Commission's statutory authority, with virtually no discussion of substance in the cases it decides or consideration of public health and safety which are the specific statutory mandate of the Commission."

NRC Chairman Selin testified that following the Sandia "truck bomb study" the Commission decided that vehicle barriers were unnecessary. In fact, two weeks after the unwelcome results were received the Commission hid them from the public and announced the study was ongoing.

o Other testimony claimed that a terrorist is more likely to attack a nuclear fuel facility rather than a commercial plant which has rather innate fuel. The "payoff" is not as great, he claimed. He fails to understand that building a nuclear bomb is a formidable task and can be bypassed by causing a disaster at a commercial plant which has a far greater radiological source term than dozens of bombs.

o Currently there are no specific regulations which must be implemented after a request for increased alertness and security. There are only contingency plans which were designed by each licensee. The NRC approves of the plan design if it can be implemented within 12 hours and does not judge the effectiveness of the plan.

o The NRC has not updated security regulations as promised on Feb. 24, 1977. "The kind and degree of threat and vulnerabilities to such threats will continue to be reviewed by the Commission. Should such reviews show changes that would dictate different levels of protection, the Commission would consider changes to meet the changed condition."

I think you have observed that licensees are concerned with meeting regulations without real consideration by the NRC and licensee for the effectiveness of the regulations. Mr. Selin believes the "real question" is: what was GPU's security required to do, rather than a true evaluation of the



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actual circumstances and effective and timely responses.

o Three Mile Island is an attractive target by name and because it is the only plant to have accident-generated water stored in large tanks visible from the road and visitors center. I warned the Nuclear Regulatory Advisory Panel for the Decontamination of TMI Unit 2 on April 16, 1992 that there was inadequate protection. I asked, "What safeguards are in place right now that would prevent, let's say a terrorist from Libya or Iraq, from using a rocket launcher to penetrate those tanks and cause contamination tonight? Tonight's a full moon, if the clouds rolled away, they could see pretty well." There was laughter from GPU which is on my audio tape but not in the transcripts. GPU's Bob Rogan responded: "Well, first, we would hope that one of the reasons why that wouldn't happen is because our security program, we think, is pretty good and that is what it's designed to do, among other things, is to prevent the intrusion, unauthorized intrusion, sabotage and that sort of thing." Was I supposed to believe that security guards can detect and stop a rocket-propelled grenade attack from the road or waterways along the plant? A rocket-propelled grenade attack like the one at the French Phoenix Nuclear Plant is beyond the US design basis threat.

I also warned the public via letter in the local paper (Nov. 1992) that GPU and the NRC have poor security policies and decrcribed TMI as "prone to sabotage." A college textbook used all across the US titled Security and Loss Prevention, cites the poor security at TMI and mentions a headline calling "Three Mile Island, Paradise Island for the Saboteur." I feel like I'm living near a plant with the Star of Bethlehem shining over it and calling for attention from terrorists. In today's WACKO world (deliberate reference to the cult in Waco Texas) we are a target! With your help, we can be sure the attention is refocused on strong security.

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o It becomes apparent from reading documents that the easiest way to cause a disaster is with explosives. I'm afraid there is no practical protection from a small private plane bombing. Even a radio controlled model airplane could deliver 10<sup>1</sup>bs of plastic explosives. I know of other ways to cripple a plant.

o If an intruder enters the turbine building (a non-vital area) he can directly effect the reactor building (a vital area). By simply closing a few valves or interrupting electrical circuits at the turbine control panel, the intruder can cause the reactor to SCRAM. At this point, an offsite saboteur with little or no chance of detection, can destroy offsite power supply lines needed to maintain control of the core. Backup diesel generators which are prone to failure, and have also been sabotaged on numerous occasions, are the last line of defense in what proves to be a very shallow depth of defense. The plant really is "skating on thin ice" at this time. If the saboteur has disabled the generators, which is a relatively easy task, or there is generator failure, the plant will be totally out of control. I understand the battery system cannot power the huge pumping equipment. Pierce Nye had plenty of time to SCRAM the reactor. I hope you understand the gravity and the ease of what 1-3 men can do.

At the Pa. House of Representatives Hearing I requested the Chair ask the question of GPU: "Were the offsite powerlines searched for explosives and guarded"? GPU did not know. I understood this to be a response in the negative. I should have followed with the question: "Were the backup generators found to be operational?" This is another area where regulations are lacking. I understand the Palo Verde incident was more than just a plan. An organized team with vehicles destroyed 3 of the 4 offsite powerlines. The NRC has no excuse for ignoring these "warning bells".

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o The issue of a motive for killing a large number of people should not be debatable anymore. Upon close examination of the 1979 "incident" at TMI you will find that the Kemeny Commission could not rule out sabotage and even urged that sabotage should not be dismissed. The FBI believed that an investigation into the closed emergency feedwater valves was not necessary despite a request by Mr. Kemeny himself. There were other events including a missing valve wheel that suggested sabotage had occurred. The SCRAM happened at precisely the one year anniversary (to the minute) of criticality at Unit 2. The SCRAM was triggered from the turbine building (Mr. Nye was in the turbine building) and the closed emergency feedwater valves are also located in the turbine building. Personnel interrogations were set up and then dropped because nobody believed a worker would intentionally cause a disaster. There were over 180 people who had access to those valves during the first four hours of March 28, 1979. The Union of Concerned Scientists report over 120 acts of sabotage have occurred at US plants. The chief nuclear engineer for this group is a former NRC official who has actually purchased technical plant designs from crooked guards.

I believe the investigation was dropped because onsite events could not be connected with a perpetrator or motive. But, investigators did not know that a Harrisburg based cult calling themselves the "Neo-American Church" had warned its members to leave the area before April 1979. A letter from a cult member warned that a "great wail" would go up from the people who lived in a geographic area which was defined by specific landmarks prophesized by the "Master". A copy of the letter was turned over to the Dauphin County District Attorney 4 months prior to the incident with a specific request for increased security at Three Mile Island. We know for a fact that the cult left town and even warned relatives who were not members to flee the area in the few days before the emergency at TMI on Mar. 28, 1979. This highly motivated cult had

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successfully broken their "Master" out of prison on 2 occasions. On another occasion 2 cult members drowned in the sewer system beside Western Penitentiary while laying battery powered homemade phone lines into the prison. A sudden storm overflowed the normal drainage system and filled the overflow system catching the members by surprise. When the bodies were discovered, the Pittsburgh Post Gazette connected the cult with other newspaper articles about TMI.

The specific motivation for the cults actions can be found in a book written by one of the members. The Neo-American Church believes that "man has evolved from apes and will evolve into gods." Because they believe we are living in the final cataclysmic days, "prior knowledge of disasters will be helpful to avoid being in the area." If one is to evolve then one must stay alive. The author writes: "disasters can be natural or man-made". So, in a bizarre twist of "survival of the fittest" theories, the cult believes they can hasten the process by killing the undesirables and achieve the status of "god".

The Office of Enforcement and Inspection was aware of the newspaper warnings about the sabotage plans, but did not credit the connection because a precise date was not given. If the cult gave a precise date for their actions they would have been even more foolish than the World Trade Tower saboteurs. It appears however, that they did pick the first anniversary of criticality. I know that the "Master" personally conducted his own research at the same library that I do. Librarians had given him the nickname "Manson of the East", even before his evil deeds were reported in the news.

I believe, and know of other people in the position to know, that the accident at TMI may not have started by accident. In the few months before the "Master's" prophesy, a memo at TMI warned about the steam generator boiling dry if emergency feedwater valves were closed when the reactor SCRAMS. The memo warned the situation could become dangerous.

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The main reason the fuel became uncovered was because the PORV stuck open. To this day there is too much radiation for inspection and a GPU engineer told me that sabotage cannot be ruled out. We believe that the incident only began with an act of sabotage and that poor plant design, human error, and inadequate instrumentation played key roles in the development of the emergency.

Even though I don't have the skill or authority to prove this hypothesis, I can prove that there are people who are interested in killing large numbers of people. When one of the cult's buildings was raided by police, booklets on sabotage were found.

A thorough investigation of witnesses, criminal court records, physical evidence, suspects, and motives could be conducted in order to prosecute the saboteurs. The FBI testified that they do pursue saboteurs for decades.

o I want to add some clarity to the opening of a 4 inch steel door with an explosive charge. Once an intruder SCRAMS the reactor, a tremendous amount of noise and vibration occurs from cavitation and large valves operating, etc. . The first few moments are marked with intimidating physical sensations in some of the buildings to the point of instilling fear and temporary confusion. During the 1979 emergency, hydrogen in the reactor building actually exploded with the force of 28PSI. The shock was heard and felt in the control room but controllers mistook this for the normal sounds and vibrations of a SCRAM situation. Nearly 100 alarms sound and flash which can be quite distracting. The sound and shock of a small charge at a doorway may not be correctly interpreted. You should also understand that when a SCRAM occurs people are literally running about, making an intruder hard to pick out.

- o I strongly recommend that underground power supply lines be required.
- o Better lighting is obviously needed, especially during an emergency.
- o Video monitoring must have the capability of tape review during an

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intrusion without losing the ability to monitor and record live events.

Reviewing tapes could help identify weapons and the number of adversaries. One should note that during the emergency in 1979, when the printer fell behind by over 200 minutes, a decision was made to dump the stored alarms yet to be printed, so as to obtain updated information. Since the appearance of security is a deterrent, I am urging well-armed guard towers be required at every plant.

"Use of deadly force is authorized" signs should be posted.

o The information I have found in the public domain has revealed:

1. methods of gaining access to plants and buildings
2. size and strength of security force
3. where the security is likely to be posted
4. sabotage targets and priorities
5. technological designs to prevent sabotage (some actually make sabotage easier)
6. methods to be certain radiation is released in the more subtle "insider" sabotage scenarios
7. methods of disrupting communications; internal and outgoing
8. sabotage tools and devices
9. nuclear plants are much more vulnerable than anyone believes, which could cause a saboteur who has done his homework to conclude that a nuclear plant is a highly attractive target which can be successfully assaulted because of the overconfidence of the NRC and licensees

o I am afraid that Pierce Nye has inspired a more spectacular assault.

I would like to participate in the public input that the NRC is requesting.

Would you please be sure this happens. Thank you for this opportunity and please add my testimony to the record. I am confident that the current state of NRC security policies, attitudes, and inaction is about to be changed.

# International Union, UNITED PLANT GUARD WORKERS OF AMERICA (UPGWA)

INTERNATIONAL HEADQUARTERS: 25510 Kelly Rd., Roseville, Michigan 48066  
TELEPHONE: (313) 772-7250 FAX: (313) 772-9644

EUGENE P. McCONVILLE  
President

LOUIS R. SCOBY  
Vice President

93 MAR 25 11:59 AM  
RONALD L. WARFIELD  
Secretary Treasurer

March 22, 1993

The Honorable Joseph I. Lieberman  
Subcommittee Chairman  
Senate Environment Subcommittee  
316 SHOB  
Washington, D.C. 20510

Dear Senator Lieberman:

The International Union, United Plant Guard Workers of America, UPGWA represents nuclear security officers at 23 NRC-regulated sites and 18 DOE-regulated sites in the United States. Therefore, it is of great concern to us to hear groups like NUMARC expound their theories on relaxing security at nuclear facilities. It is unfortunate that we were not aware that a Senate Environment Subcommittee Hearing was going to be held on this subject. We only learned of it incidentally when I happened to catch it on C-SPAN 2 last Friday night.

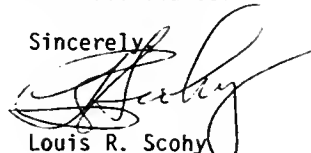
In the spirit with which President Clinton has included other unions in meetings which have a serious impact on their members, we request that we be notified and allowed to participate in any future meetings and/or hearings scheduled by your Committee.

I have enclosed a copy of a response we made to the NRC in reference to a meeting held with NUMARC on January 22, 1993, which we attended. Unfortunately, we were given late notice on that meeting and filed a rather short and somewhat late response (copy enclosed).

I would also like to take this opportunity to invite you to attend a Nuclear Security Conference which we are holding in Augusta, Georgia on April 16 and 17, 1993. The Conference will be attended by nuclear security officers and union representatives from the UPGWA as well as representatives from other unions that represent nuclear security officers. I believe this Conference will allow you the opportunity to hear firsthand from the frontline officers and could be very helpful in evaluating the situation. Please contact my office as soon as possible on your availability.

Thank you in advance for your cooperation and assistance.

Sincerely,



Louis R. Scohy  
International Vice President

LRS/srn/opei42

cc: E. McConville, Int'l Pres.  
The Hon. David Bonior

Enc.



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**EUGENE P. McCONVILLE**  
President

**LOUIS R. SCOBY**  
Vice President

**RONALD L. WARFIELD**  
Secretary Treasurer

January 29, 1993

BY FAX (301/504-2260), ORIGINAL BY MAIL

Mr. Robert J. Dube  
Section Chief  
Regulatory Effectiveness Reviews  
U.S. Nuclear Regulatory Commission  
Mail Station OWFN 9-D-24  
Washington, D.C. 20555

**RE: Regulatory Requirements For Protection Against  
The Insider and Impact Of These Requirements  
On Operational Safety**

Dear Mr. Dube:

Established in 1948 as a consequence of the Taft-Hartley Act, the International Union, United Plant Guard Workers of America (UPGWA) is the country's largest union of security personnel only in both the private and public sector. The UPGWA represents security officers in every major industry, business, and government facility throughout the United States.

We have bargaining units at government owned, operated or licensed facilities which employ security officers directly or indirectly. The government agencies include NASA, GAO, Navy, Air Force, Army, DOE and others.

Our Union has years of experience with nuclear security at all levels at both DOE and NRC sites. We can make a significant contribution to the consideration of those matters recommended by NUMARC and adopted by the staff.

The comments of the UPGWA should rank with those of NUMARC. After all we speak on behalf of those security personnel who are actually on the front line in providing security at nuclear facilities licensed by the NRC. The UPGWA represents security inspectors and other security personnel at approximately twenty-five (25) nuclear power sites throughout the United States.

While cost containment is a significant factor, it must not reduce the fundamental purpose of security to safeguard persons and property at nuclear sites, and the citizens in the area. We are concerned with



Mr. Robert J. Dube  
January 29, 1993  
Page Two

the statement that "While factors for determining potential manpower savings are very site specific, the staff estimates nominal savings of 3 to 5 persons per site, and possible savings of up to 10 persons at some sites." The termination of even one trained and dedicated security inspector is not "nominal savings" to that employee and his family.

The UPGWA has always been a willing partner in legislation, rules and regulations and policies which maintain and enhance the nuclear security profession and advance nuclear safeguards. Such developments, however, must proceed cautiously, and with due consideration for the level of security and those employees who maintain it. For example, Recommendation 3 "... to reduce the requirements for responding to nuisance alarms at vital area doors." is frightening. How does one know in advance that an alarm is a nuisance? The very purpose of any alarm is to give warning and evoke a response. An unattended "nuisance alarm" may be the event which triggers a major catastrophe at the site.

It appears that Recommendations 1 through 6 are designed and intended to reduce - not improve - the level of security. While NUMARC's proprietary interest is understandable, cost savings should not compromise security without a compelling showing that certain safeguards are no longer necessary. It does not appear that such a showing has been made as to Recommendations 1-6. Moreover, no provision is made for the possible reduction of security personnel. The Commission, NUMARC, and licensees have a duty to protect the interests of those security inspectors who have given their dedicated service to nuclear security.

The UPGWA respectfully requests that the Commission hold the recommendations in abeyance pending further study and review. Hearings and workshops should be held for the purpose of receiving the views and recommendations of security inspectors and other line security personnel. The UPGWA will attend such proceedings to protect the interests of those men and women whose job security might be threatened by any change in Commission rule or policy.

Thank you for your consideration.

Respectfully submitted,



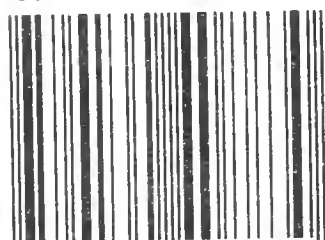
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ISBN 0-16-040883-0



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